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MANKIND

QUARTERLY

— mala opinio bene parta delectet —

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CONTENTS

ETHNOLOGICAL ELEMENTS OF AFRICA: PART II
by R. Gayre of Gayre 3

AN INVESTIGATION OF THE NEED FOR SPIRITUALITY
by Henry H. Reiter 17

RACE, PSYCHOLOGY AND EDUCATION: WILMINGTON, NORTH CAROLINA
by H. M. Roland and Donald A. Swan 19

THE ANATOMY OF THE DUCT SYSTEM OF THE BANTU PANCREAS
by I. J. M. Niekerk 37

OBITUARY: PROFESSOR CORRADO GINI 54

BOOK REVIEWS 55

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ETHNOLOGICAL ELEMENTS OF AFRICA

By R. GAYRE OF GAYRE

PART II

SOMALIA, ADEN AND THE YEMEN

Somalia was formerly composed of French, British and Italian Somaliland. Now the whole area is divided into French Somaliland and Somalia, which is a union of British and Italian Somaliland. The capital of the former is Djibouti and that of the latter is Mogadishu. The apparent anachronism of the continuation of a French colony in such a situation is due to the fact that Djibouti, from which the railway runs to Addis Ababa, is a main port of entry for Ethiopia. Under no circumstances would Ethiopia favour the union of French Somaliland with Somalia, and Somalia would rather see the continuation of the French colony of Somaliland than its absorption into Ethiopia. It is therefore generally thought that French Somaliland will indefinitely remain a colony of France.

In contrast to Ethiopia, French Somaliland is a land of desert —perhaps more so than much of the northern Sudan—and has few, if any, natural resources. It is the home of Somali tribes who, rather like the Nubians and Fuzzy Wuzzies of the Sudan, belong to the dark-skinned aboriginal stocks of north-eastern Africa. They are far from Negroid and have fine features approaching those of the Causasoids in form, which indicates considerable influence of Caucasoid genes, if the theory is correct that the Hamites of north-eastern Africa and the Horn are an ancient cross between Caucasoid and some form of Australoid. The intense heat and aridity of this region would have rapidly eradicated any throwbacks to fairer complexions so that in such a cross, even though the features might be a close approximation to Caucasoid, the nigrescent Australoid coloration would prevail because of its selective value in this environment.

Djibouti, the capital of French Somaliland, is a cosmopolitan town inhabited not only by the native Somalis but also by many Indian clerks, shopkeepers and money changers. Because of the former French connections with Indo-China, Mongoloid types are also found in the banks and merchant houses, but the Indians

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predominate in these walks of life. In addition there are many Arabs in and about the town. The Somalis themselves do not form any significant middle class of clerks or shopkeepers. However, Djibouti is not representative of the territory as a whole.

In common with most regions where the people are pastoralists, and so migratory, the incidence of such diseases as leprosy is low. Leprosy is mainly found along the borders with Ethiopia, as it is spread by the movement of Hamitic peoples from Ethiopia into French Somaliland. However, this disease does not constitute a problem as it does in Ethiopia and in the Negroid regions further south in Africa.

Before going on to discuss the Somalis it is convenient at this point to cross the water at the southern end of the Red Sea and consider very briefly the ethnology of Aden and the adjacent parts of the Yemen, since the Arabs constitute an element which constantly crops up in any consideration of the ethnology of the east African littoral.

On landing in Aden and south-western Arabia we leave behind the darker-skinned types, and the people show a coloration which is distinctly Caucasoid. This is even truer as we pass north into the Yemen. Many Yemenis would often pass for Lebanese, and in certain parts of the Yemen some of them not only have very fair (although, of course, sallow) skins but also green and hazel eyes—witnessing not merely to Mediterranean and Armenoid blood (which is naturally the basis of the Caucasoid stocks of Arabia and the southern borders of the Caucasoid world) but also to either an Atlantic or a Nordic strain, or both, since it is only when blue-eyed people of these two races cross with darker-eyed types that the grey and green colouring occurs.

We may well speculate on how such Atlantic or Nordic blood reached and established itself in south-western Arabia. The Khassite Hyksos, the Syrian Aramaeans, and the Aramaean Hebrews of Patriarchal times, must all have brought Nordic blood as far south as Egypt and adjacent parts of Arabia, and some residual Atlantic elements may well have been derived from the original Caucasoid Atlantic Hamites (ancestors of the fair Libyans, who must be distinguished from the Caucasoid-Australoid-Melanoid stocks of north-eastern Africa which we now call Hamites) who seem to have been originally derived from an Atlantic stock, since the type still survives among the Berbers.

However, we know that Sheba (which was a kingdom in the region now called the Yemen) had affinities with ancient Israel (which were traditionally explained by the Queen of Sheba having had children by King Solomon). This same region must also have been visited from time to time by the Phoenicians (who had Aramaean blood) as well as in later times by the Greeks

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and Romans who were all exploring and trading in the Indian Ocean. From all these sources, accumulatively, northern European Caucasoid genes could have entered into the population.

The indigenous people of Aden, before its growth as a great entrepôt, were of much the same type as the Yemenis—mainly of the Mediterranean race, with some Armenoid and Nordo-Atlantic influence as well.

Although the climate of the whole of this region today, because of its great heat and aridity, cannot be considered ideal for the Caucasoids, particularly those carrying northern racial genes, it should be remembered that this was not always the case. At the end of the Pleistocene period the Sahara, Egypt, the Sudan and Arabia had much greater water supplies than exist now. There were permanently flowing rivers where today there are dried up wadis, and there was an adequate rainfall where now there is very little. The Caucasoids were therefore able to penetrate deeply into all these regions right down to the tip of Arabia at Aden and along the southern shores of Arabia. In Africa they were able to bridge the Sahara and penetrate across it until they reached Black Africa in the equatorial regions and, further east, till they came to the Horn of Africa. The existence of this great region—which is now desert but was then open savannah and grassland—running from the Atlantic to and across Arabia and, further south, to the Horn of Africa, accounts for the creation of the so-called Hamites, for the Atlanto-Mediterranean Caucasoids crossing this region came into contact with earlier peoples, such as the Australoids in the region from the Sudan to the Horn, and from crossing with these arose the Ethiopic and Cushite or later Hamite racial types, and the languages associated with them. Thus a Hamitic screen of peoples came to exist between the Caucasoids in Africa and the Negroid races proper.

It was through these better climatic conditions that civilisations like that of ancient Sheba arose in Arabia, with their cities, temples, agriculture, horticulture, advanced irrigation developments, learning and trade. Due to the advance of aridity, there are now deserts with scattered villages only in certain less austere places where there were formerly cities with advanced civilisations. The Yemenis and the indigenous people of Aden are the descendants of the founders of these ancient White civilisations of Arabia which were flourishing for two millennia at least before the Christian era. When the aridity increased the migratory pastoralists of Arabia were forced down on the declining cities, and as raiding Bedouin they combined with the climate in destroying these civilisations.

The Bedouin blood thereupon became mingled with that of

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the peoples of the coastlands and the immediate hinterlands of those coastlands who had created these Arabian civilisations. The Bedouin appear to have been racially somewhat different from the city-dwellers of the coastlands. Whereas we can infer that the Yemenis and similar peoples were originally of Mediterranean-Atlanto-Nordic type, the Bedouin, in contrast, appear to have been of a Mediterranean stock with a substantial Armenoid infusion. This explains why some of the Arabian skulls which have been measured in the past have been found to be brachy-cephalic instead of dolichocephalic as would have been expected among Semites. Where this Armenoid strain comes from is purely a matter of speculation at this stage. However, it should be remembered that the ancient Sumerians in Babylonia were Armenoids. The Hittites also were largely Armenoid. Armenoid elements are found in the Kurds and may have been present to some extent in their forerunners the Khassites. South-east of these regions, a substantial number of the Medes were also Armenoid, as are so many of the Iranians, and their offshoot the Parsees, to this day. It is likely, therefore, that the Bedouin in the Arabian desert absorbed this Armenoid strain from the ring of settled peoples to their north and east.

However, in the Arabian peninsula, particularly in Aden, we find darker strains than these purely Caucasoid stocks. This is not surprising in view of the nearness of the coast of Africa across the Red Sea.

These darker strains can be divided into three classes, all of which are intrusive to the Protectorate and Federation in relatively modern or recent times. First of all there are the ubiquitous Indians in whose hands are all the shops and the retail trading. They also are a basically Caucasoid stock, and of course their speech is Aryan. As I have pointed out elsewhere I look upon the Indian as substantially a dark Mediterranean. In addition, however, Indians of the shopkeeping castes and classes, whether they are Moslem or Hindu, also have much Armenoid blood.

Secondly there are the Somalis, of whom many are found in the port, as might well be expected. They have mainly come across from French Somaliland but some have come from as for away as Italian Somaliland. Owing to British enterprise which created a thriving port, formerly a coaling station and now a centre for oil refineries, Aden is much superior to Djibouti (despite French efforts to build up that port to take over the trade of Aden), and so it is not surprising that Aden is a magnet which draws every sort of foreigner to it for the work and trade which it provides. This accounts for the presence of the Somali settlers as well as the Indian traders. Many of the Somalis even

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arrive without prospects of work, and without any place to live, so they dwell in shacks until they are housed in better conditions by the authorities. These Somalis, however, appear to be ambitious, and some of them while still unemployed go to night school to learn English in order to be able to get work. Some of them work as clerks, although most of this kind of work is done by the Indians and Arabs. On the whole the Somalis in Aden perform much the same function as do the Nubians in Egypt and the Sudan—they are waiters and servants in the hotels. It seems that the darker racial strains compounded from Caucasoid-Melanoid crosses both in north-east Africa and here in Aden gravitate to this kind of service. They do not, therefore, challenge the position of the Arabs or the Indians, but form a class to themselves below these two Caucasoid stocks.

Thirdly, in the lowest classes of the social pyramid, are those people of mixed type who appear to have Negroid traits and are, no doubt, the result of miscegenation due to the importation of Negro slaves into this region in pre-British times.

Generally speaking, however, although Negroid traits are found, they are not a prominent characteristic of the population as a whole, and the peoples of southern Arabia are medium to dark Caucasoids who are to be distinguished from the less Caucasoid peoples in the adjacent parts of Africa by their lighter colouring and a lesser infusion of Melanoid and Negroid traits.

Returning to the mainland of Africa, the first thing which is evident is that the people of Somalia are darker than the peoples of Egypt, the Sudan and Arabia, and the occurrence of Negroid traits is more apparent. Nevertheless, this statement should not be taken to imply that they are a Negroid people, or even one which could truthfully be called a mixed stock with a large Negroid base, for this is not correct. It is with some justification that the Somalis consider it an insult to be called Negroid, since in fact they—and certainly their ruling classes—are not Negroid. They are very insistent upon the fact that they are of Hamitic stock.

Although, in general, the colour range shows a greater degree of nigrescence than in some of the other countries discussed, a large part of the population is of a golden or dark copper colour rather than black. But even where it is black a substantial part of the nigrescence must be traceable to Australoid rather than to Negroid origins.

The Arab type is clearly distinguishable in the ethnology of Somalia. This is derived from the numerous settlements the Arabs formed down the east coast of Africa from the earliest times. At Mogadishu, for instance, there is the Palace of the Sultan of Zanzibar, and a complete Arab town forms the nucleus

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around which the Italian colonial city was built. Old Italians remember how they used to live in the Arab town before the colonial city was established. Although the Arabs are not necessarily all of pure Caucasoid stock—since polygamy and slavery here as elsewhere have caused miscegenation—there are pure Arab types with long thin faces, acquiline noses and light skins, without any trace of non-Caucasoid blood. Even those who evidently have mixed blood tend to show a predominating number of Caucasoid rather than other traits.

From the Arabs a great deal of Arab—that is, Caucasoid—blood has entered into the neighbouring coastal Somalis, so that some are as light as the Arabs. This seems to be particularly noticeable in the women, perhaps because they live more sheltered lives and so do not tan as much as the men who may be genetically equally Caucasoid in colouring.

It can be said that narrower noses and thinner lips are common among the Somalis as a whole. Although their hair may sometimes be frizzy, and so to that degree may indicate Negroid genes, it grows to much greater lengths than is possible among pure Negroes.

However, a feature which begins to be noticeable in some of the women, probably for the first time in any significant degree in north-eastern Africa, is the condition of steatopygy or fat buttocks. Although this could come from the Negroids it is probable that in this instance it comes from the Bushmen—from whom in my opinion the Negroids have in any case derived it—for some of the women with this trait have rather round faces, high cheek bones, shorter skulls, and some of the facial features associated with the Bushmen. Since we know that even down to our own times there are surviving enclaves of Bushmen-type peoples in Somalia, it seems certain that these traits must be of Bushman origin.

The breasts of most of the women appear to be round or hemispherical rather than out-jutting and pyriform, and this is consistent with a lesser importance of the Negroid element in the population. Where Negroid elements occur they are indicated by prognathism, thick and everted lips, broad nostrils, very dark skins and frizzy hair. It is seldom that all these traits are found in one person among the Somalis.

These more obvious Negroid traits again seem to be found in the lower classes. As in other countries, it might be argued that slave origins, which no doubt account for these Negroid types here as well as elsewhere, are not consistent with their being found in the higher classes. However this may be, the fact remains that the Negroid types seem to be found mainly at the base of the social structure. This is a subject well worthy

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of a specialised ethnological survey. It may be remarked that in the case of Somalia the members of parliament and all the officials are, with very few exceptions, of the Hamitic or Semitic types, and are not Negroid.

When considering Somalia regionally these remarks on the ethnological structure have to be modified, as all parts of the country are not necessarily the same. For instance, the interior and northern parts are hilly, ranging from dry savannah to arid land which is practically desert. Next, along the east coast, is a plain which, in the southern half of the country, is watered by the rivers Uebi Scebeli and Giuba. Here there are extensive marshes and swamps in the rainy season, although the soil is sandy and dry for much of the year, as a consequence of which the vegetation is of the xerophilous type—that is, stunted trees, bushes and shrubs, often evergreen, which are able to resist heat and drought. To the east of this plain, between it and the sea, there are lines of sand dunes which effectively cut off the interior from the coast. The Arab settlements, being coastal, did not penetrate inland to any extent, and the Somalis do not appear to have crossed the dunes and settled thickly in the coastlands. The mixed Arab-Somali type is due to subsequent crossing. It is not essentially due to crossing on the coast itself.

The interior plains and hills are the habitat in which the Somalis breed cattle (of the *Bos Indicus* or humped Indian type), sheep, goats, asses and particularly the camels which are exported in large numbers from Somalia to the Sudan and Egypt, and form the basis of the economy of the pastoralist Somali people.

Into this country occupied by a Hamitic or Cushitic people (of Caucasoid-Melanoid—perhaps Australoid—origin) with a coastal screen of Arab (Semitic Caucasoid) types, two variant factors have been injected in the middle and lower Uebi Scebeli and Giuba valleys. In the first place these areas are fit for agriculture, and it is here that the Italian colonists have built up large and efficient farms. Since the Somalis are pastoralists, and agriculturalists are needed in farming regions, other peoples were brought in from outside, often at first as slaves before Italian times. Secondly, the British administration which existed retired native, non-Somali soldiers in these areas from outside the territory. Some of these are said to have come from the Sudan, but judging by the present population it is clear that at one time in what was to become Italian Somaliland settled if they came from there they must have been from the least Arabic parts.

However, the fact of the matter is that the inhabitants of these southern regions of Somalia, the agricultural parts of the Giuba and Uebi Scebeli basins, have more or less Negroid

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traits and are not typical of the Somalis in general. Whatever were their origins they are quite de-tribalised and they speak Somali. Long hair is nevertheless often enough found among the women, indicating that as a whole they are influenced by Somali blood.

Generally speaking, as we have already observed, the Somalis look down upon the Negroes, and in fact, even in Somalia itself, the upper classes are lighter in complexion and generally non-Negroid in appearance. These facts also have a bearing on their relations with their southern, Kenyan, neighbours. It seems probable that if Somalia were not so pre-occupied with the quarrel with Ethiopia over possession of the Ogaden, the Somali guerillas working inside north-eastern Kenya, the so-called Shiftas, would be even more active than they are at present.

It is in the river valley areas where the Negroes are located that leprosy is a factor of significance. It is for this reason that the Sovereign Military Order of Malta has its leprosarium on the Island of Alessandro in the Giuba River. Although, from the environmental point of view, the heavy agglomeration of population created by agricultural pursuits must make for closer contact and thus increase the risk of infection, nevertheless it would be far too facile to conclude that this is the sole cause of the heavy incidence of leprosy among those parts of the population which have a Negroid basis. The probability is that a genetic racial factor is also involved—as is now generally believed by many leading leprologists. After visiting leprosaria in many African countries I am coming to the conclusion that the tuberculoid type of leprosy is more common among the Negroids whereas the Caucasoids, Mongoloids and Cappoids are more often affected by the lepromatous type.

KENYA AND TANGANYIKA

When we pass south of the Highlands of Ethiopia and the savannah and partly desert country of Somalia we leave behind the countries of the Hamites, Cushites or Ethiopics (a racial breed compounded of Caucasoid and some stock such as Australoid) and reach that which belongs to the Negroids. Nevertheless, just as the Ethiopics themselves provide a screen between the Caucasoids and the Negroids, so we find a screen of peoples who intervene or once intervened between the Ethiopic block and the Negroid block even if they have now been squeezed out in some places. These peoples are variously called Nilotes, Nilo-Hamitics, Nilo-Sudanics, and similar names. They are basically Negroid peoples but they also have much blood from the more northerly Hamitic and Ethiopic peoples. They are

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found in the southern Sudan, in Uganda they form the conquering minority over the Negroid population, and in Kenya we find the same cross-bred stock in such peoples as the Massai. Further south in Central Africa they formed the ruling Watutsies.

Generally speaking these Nilotic peoples are Negroid with an Ethiopic overlay, and their languages are probably from some source in common with Bantu but probably also have some Hamitic elements. From this it is clear that these two stocks have mixed in the past. This probably occurred when the Bantu expansion began from the Congo and moved northwards into Uganda, to the Sudan, and ultimately to the Highlands of Ethiopia, where the Bantu were thrown back and sent on the march to the south which carried the Bantu expansion as far as South Africa by historic times. Very early during the course of these events, as the first contacts were made with the Ethiopics, a cross occurred between the two stocks which resulted in the Nilo-Hamitics, Nilotics or whatever designation is chosen to describe this shatter-belt of not so pure Negroids.

Thus we have several zones of peoples which by selection and normal evolutionary processes have become racial breeds lying between the two major stocks, Caucasoids and Negroids. Between the Atlantic and Mediterranean races—the southern frontier races of the Caucasoid world—and the Melanoids there is what we now call a Hamitic group of peoples, mainly represented in the east by the Ethiopics who are an actual racial breed of great antiquity probably derived from a cross between Atlanto-Mediterranean Hamites and Australoids. Further west, and for the present outside our survey, these Caucasoids crossed mainly with the Negroids. Of a much later period in prehistory, these latter crosses are nothing like such distinct racial breeds as we have in the Cushitic, Ethiopic or Hamitic stocks of Ethiopia and the Horn of Africa. The eastern Mediterranean Semites overwhelmed the Nile Valley part of eastern Africa, and so a Caucasoid back-cross of the Hamites occurred. In the Sudan, for instance, the Semitic element overlaid and interbred with the Ethiopic stock to produce the northern Sudanese.

South of the Ethiopic or Cushitic racial breed, which can be considered as having closer affinities to the Caucasoids than to the Melanoids, is a zone, less well developed because of its more recent origin, in the form of a shatter-belt of stocks into which this Ethiopic blood penetrated, overlying a Negroid foundation. These stocks are the Nilo-Hamites and Nilotics who, despite their Cushitic blood, must be considered to be nearer the Negroids in their affinities rather than somewhere midway between the Caucasoids and the Negroids.

Perhaps because of Hamitic dominance when the encounters

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occurred which led to the crosses, a large number of these Nilotics are pastoralists. This is true of the Massai, who are the warrior pastoralist people of western Kenya and north-western Tanganyika. But there are other Nilotics who are agriculturalists, such as the sedentary Nandi, whose ancestry may have become mixed by a process of infiltration and acculturation rather than by anything else.

Before proceeding any further with the discussion of the countries south of the Ethiopian highlands and the desertic regions of Somaliland, it is necessary to point out that in an ethnological study the present political frontiers have to be ignored as they are purely artificial. They merely represent the degrees of penetration of colonial powers, in this instance of the British and Germans respectively, which have caused certain non-organically based states to be created. Thus, the Massai, for instance, are found on both sides of the frontiers of Kenya and Tanganyika.

Similarly there are Somalis on the Kenya side of the Somalia-Kenya frontier. At the present time this is causing a great deal of trouble between the two states as the Somali Shiftas are operating deep into Kenyan territory, and it is clear that the Kenya Government has lost, or is in danger of losing, control over the north-eastern part of the country. In fact these new African states have all the minority problems which have bedevilled European frontiers and have been the frequent causes of unrest and even of war. This is, no doubt, a factor behind the creation in these Negroid states of the current campaigns against "tribalism" since if they cannot destroy the tribal structure, and create artificial nationalities out of the present states by every means of social engineering, then there is a danger that they will break up and the natural ethnic organic units will emerge.

The Nilotics are generally tall people with narrow skulls and narrow faces. The Massai, for instance, have much narrower noses than the Negroids proper. This trait is undoubtedly inherited from the Ethiopic element in them.

The warrior characteristics of the Massai and other tribes which have clearly marked Ethiopic or Hamitic elements, such as the Herero of South West Africa or even the Nguni (Zulu) of South Africa, are in my view inherited from Ethiopic or Cushitic ancestry. The Sudanese, some Ethiopians (such as the Gallas) and the Somalis are fierce warrior stocks, and it cannot be a coincidence that strains which show some affinity with them also display the same temperamental qualities. Thus, in Kenya, there is no doubt in any impartial observer's mind that the Massai in the west and the Somalis in the north-east are more

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than a match for the richer, better organised, sedentary Negroid tribes such as the Kikuyu.

The Luo who are found in Kenya and are often classified as Nilotes are in fact, ethnologically speaking, Hamiticised Negroids, and their characters appear to be more closely related to those of the Kikuyu and other Bantu peoples than to those of the Hamitic peoples. That the Luo are, or were, in process of Hamiticisation is rather indicated by the fact that they are Nilotic-speaking Kavirondo, although other Kavirondo are Bantu-speaking.

The most important tribes among the Bantu of Kenya are the Kikuyu and the Kamba, although there are others such as the Nyika tribes of whom the best known in the coastlands of Kenya are the Giryama.

The traditions of the Kikuyu bear out faithfully what I believe to have been the history of the movement of the Bantu from the Congo to the north until they met the resistance of the Hamitic peoples and were thrown back. These traditions indicate that the Kikuyu came from Ethiopia in relatively recent times. No doubt their earlier history of having come up from the Congo to Ethiopia had been forgotten. We also know that such tribes as the Giryama who now people the coastlands of Kenya were driven south in the sixteenth century by the Hamitic Galla. The Kikuyu consider they are derived from the Kamba, who are found mainly to their south-east. However, as the Kamba are a sedentary people with cattle, and have never used the spear which is the most characteristic weapon of the Bantu, it is possible that the whole of this group has a certain amount of Hamitic blood, even if it is not by any means so marked as in the case of the Massai.

The inhabitants of Kenya are decidedly more Negroid than their neighbours to the north. Nevertheless they are by no means homogeneous. Not only are there several distinct tribes and sharply demarcated ethnic groups (Nilotic-Hamites, Bantu and Somalis) in the demography of Kenya, but also there appears to be wide variation within the Bantu groups themselves. There is a wide range from the real Negroid black colour to yellowish brown. The occurrence of the former is more frequent among the Bantu than among the Somalis further north. Although the yellow colouring beneath the black, which produces the golden undertone, is observable in Somalia, it becomes more apparent in individuals as we move southwards, and it is particularly characteristic of many individuals in Tanganyika and neighbouring Mozambique. In my opinion it is derived from the Cappoids, from Bushmen and Hottentot sources, due to these tribes having been overrun by the Bantu as they wheeled round to the south

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after they had failed to make any progress into Ethiopia and Somalia during their expansion from the Congo. It is a feature which becomes progressively more apparent in the Bantu until South Africa is reached, when golden brown rather than black is the characteristic colour and, with other traits, witnesses to the fact that they are substantially Cappoid, probably Hottentot. Only when we reach Malawi and Zambia can this progressive increase of the yellow content of the skin colour be said to be interrupted, and this is probably due to the fact that the Zambesi acts as a funnel down which Negroid genes flow from the Congo, so that in these two countries—and to some extent in Rhodesia to the south of the Zambesi—we get what appears to be an increase of nigrescence in skin colouring. In addition to these physical characters the short frizzy hair now becomes common throughout the whole Bantu-speaking population, and nearly as much so in the Nilotic-Hamites such as the Massai. It is likely that the thick, dense, mat-like cover which the short frizzy hair affords has natural selection value. If so this would account for its widespread occurrence as far north as the mixed Somali types (Somali-Negroids) in the Horn of Africa where, once the genes for this type of hair had been introduced, selection would probably favour the extension of its occurrence in the process of time. Thus it would tend to replace the longer but less dense Caucasoid and Australoid type of hair which may be regarded as more normal for the Hamites as a whole.

If the peculiar formation of the Fuzzy Wuzzy type of hair of the Hamites is not due to a mutation slightly modifying the Caucasoid-Australoid hair, it may be due to infiltration of Negroid types with thick matting on the head which, when crossed with the longer, finer haired types, tend to form the Fuzzy Wuzzy type. The same phenomena is observed in Melanesia and in parts of South America where it seems there is a Negroid element mixed with a longer haired stock. However, by no means all Hamites have the Fuzzy Wuzzy type of hair, and it may well be that this type occurs only where Negroid hair genes have drifted into the Ethiopic or Cushitic stocks through a mild amount of cross-breeding, after which they have been favoured by selective processes even when other Negroid genes have been bred out.

It should be remembered that although high altitude produces a cooler climate it does not reduce the effect of the sun's rays on the skin. On the contrary, they are more intense in the tropics and the equatorial regions at such altitudes as we encounter in Ethiopia and Kenya. The only time I suffered from sunstroke on this ethnological survey was in Ethiopia, and the burning of the skin was far worse than in the lowlands of Somalia and the

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Kenyan coastlands. From this we may therefore conclude that although these highlands are in some respects suitable for Caucasoid settlement there is nevertheless a strong necessity for head covering and protection of the skin generally from the sun's rays. This must mean that if Whites settled in these regions selection would favour all mutations for frizzy hair and darker skin. When crossing occurred with stocks having these characters, such as the Negroids, it would have favoured the genes for both these traits. From these considerations we can also conclude that in Negroid strains which have absorbed some Caucasoid blood (whether directly or through the Hamitic Australoid-Caucasoid crosses) there would be selective value in the survival of these very same traits, and so we must look mainly for the evidence of Caucasoid infusions in the Negroids of Kenya, for instance, not in the hair form and skin colour as much as in such characters as narrower nostrils, thinner lips and longer noses.

It might be added that in view of the high altitude of much of Kenya (6000 to 8000 feet) away from the coastal plains and other lowland areas, and despite what I have just said, the country is not in other respects one which is essentially solely suitable for Negroid settlement. Owing to the intensive solar radiation passing through the thinner atmosphere this highland country is certainly favourable to Negroid coloration, but it is not so in any other respect. With its cold nights, land at such an altitude could equally be settled by Caucasoids, as the White Highlands have been, although recent changes of government have made the survival of European populations in these parts uncertain, or even unlikely, over any length of time. Indeed, such a region could be very efficiently settled by the Mediterranean stock.

Besides the stocks already mentioned in these countries, there are Arab settlements all down the east coast of Africa. At Lamu, Malindi, Gedi and Mombasa in Kenya, all down the coast of Tanganyika, on the neighbouring island of Zanzibar, and further south still into Mozambique as far as Sofala there were settled Arab towns which were strikingly apparent to the Portuguese who arrived at the end of the fifteenth century. From these coastal towns have spread not only Arab (Semitic), Persian, Indian and even Chinese cultural influences, but also Caucasoid genes which have passed into the local populations. In the south these local populations were Hottentot at first, but later they were overrun, absorbed and displaced by the invading Bantu. Thus the region from the borders of Ethiopia and Somalia to the lands bordering the Zambesi is dominated by the Bantu but not by the Negroid races, to which the Bantu languages and cultures

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belong, for throughout the whole of this vast region not only are the Bantu not in complete occupation—as there are still Arabs along the coast, Nilo-Hamites further inland, and Somalis to the north-east—but the Bantu themselves are far from pure Negroids. They are Negroids who have absorbed much Hamitic (Australoid-Caucasoid), Semitic (Caucasoid Arab) and Cappoid blood, particularly that of the Hottentots. The Cappoids themselves are probably derived from an early Australoid-Mongoloid cross which in its turn has crossed with the Hamitics or Ethiopics to produce the Hottentots. This is why the Hottentots became pastoralists and why considerable Hamitic characteristics are found in their language and culture.

In Tanganyika, particularly in the eastern part of the country, there is a further ethnic element called the Swahili Moslems, to whom the *lingua franca* of eastern Africa from the western Congo to the coast is due. The group arose in the area of Lamu, an important Arab settlement on the northern part of the Kenyan coast. This region was occupied by the Giryama, and the language itself is Giryama with much Arabic in it as well as some Galla and even Portuguese words.

Although the Swahili Moslems are therefore basically Bantu in language and Negroid in race, nevertheless they are not pure in either respect. As in the case of all the Bantu of the eastern part of Africa, they have Cappoid genes (from the absorbed Hottentots) and even Ethiopic or Cushite elements (from contact with the peoples of Ethiopia and Somalia). They have also absorbed a direct infusion of some Caucasoid blood from the Semitic Arab settlements. The Swahili Moslems tend to form a class which ranks a little above the Bantu proper. They are sometimes found as clerks and they work in shops in such places as Zanzibar where they are employed by Arabs and Indians alike.

To conclude, therefore, it can be said that the regions of Kenya and Tanganyika have a complex and mixed history although they are basically Negroid countries where Bantu languages are spoken by most of the people. The majority of their genes are probably Negroid, but Cappoid influence, perhaps derived more from the Hottentots than from the Bushmen (although these too must have made their contribution), can be clearly seen in physical characters such as the epicanthic fold, the shape of skull and face, and particularly the light yellow skin colour of some individuals. In addition to these two basic elements, there are Ethiopic or Cushitic genetic strains in some places, as well as Caucasoid elements especially along the coast.

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AN INVESTIGATION OF THE NEED FOR SPIRITUALITY

By HENRY H. REITER

Maslow[1] presents a theoretical framework of needs which include the physiological, physical, social and psychological, but does not list spirituality as a need category. This investigation represents a survey into whether or not there exists a "spiritual need."

METHOD

The present study utilized 90 males, 30 each of Jews, Catholics and Protestants, who were randomly selected at their places of worship at non-holiday or non-sabbath times. The subjects' ages ranged from 27 to 55 with no age difference between religious groups.

A 20-item questionnaire was administered to the subjects individually. Eleven questions are asterisked and were used only as fill-ins, so that a total raw score of nine was highest. The entire questionnaire appears below:

*1. How old are you?
*2. Do you have difficulty in understanding sermons?
*3. What is your pastor's name?
4. Are you in good health?
5. Have you ever prayed to your God to grant you a favor?
*6. How long have you been a member of this congregation?
*7. Do you feel that members of other sects are, perhaps, misguided?
8. Have you ever told a "white-lie"?
*9. Do you think that (Catholics, Protestants, or Jews) are inferior to (Catholics, Protestants, or Jews)?
10. Are you a religiously devout person?
11. Do you pray solely for the glory of your God?
12. Do you have a feeling of impending difficulties, financial, physical or otherwise, for anyone near and dear to you or, perhaps, yourself?

[1] A. H. Maslow, *Motivation and Personality*, Harper, New York, 1954, chapter 5.

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*13. Do you ever question the canons, tenets or traditions of your religion?

*14. How long have you been a member of this religion?

15. Do you know of any instances where your God has granted wishes to the devout?

16. Have you ever been granted a wish through the medium of prayer?

*17. How far do you live from your (temple, church)?

18. Is there such a thing as a spiritual need?

*19. Did you ever feel that God has forgotten you?

*20. Did you ever feel that you may want to convert to another religion?

RESULTS

The Table presents the mean number of affirmative answers for each group. The greater the number of affirmative responses, the greater the "spiritual need." Note that the mean scores were very similar for the three groups. Statistical tests of significance revealed non-significant differences between the groups.

	JEWISH	CATHOLIC	PROTESTANT
N	30	30	30
M	7.0	7.5	6.7
SD	3.2	3.7	4.5

It is interesting to note that over 90 per cent of the subjects replied positively to the question: "Is there such a thing as a spiritual need?"

SUMMARY AND CONCLUSION

The data indicated that no one religion has representative members with greater spiritual needs. Furthermore, all the subjects indicated their belief in the human need for spirituality, despite their own religious affiliation. The subjects were thought to be religious people in light of their attendance at regular (non-holiday) religious services, and therefore were expected to respond affirmatively to the questionnaire.

The major finding, therefore, was not that there does exist a spiritual need, but that religious affiliation is not a discriminatory factor in the belief in the need for spirituality.

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RACE, PSYCHOLOGY AND EDUCATION: WILMINGTON, NORTH CAROLINA

By H. M. ROLAND and DONALD A. SWAN

This article is a preliminary report on racial differences in psychometric intelligence and scholastic attainment in Wilmington, North Carolina, and is part of a larger study on racial differences in mental growth and educational achievement throughout the United States. It is the purpose of this article to describe some of the Wilmington test results, compare them with similar studies in other areas, investigate briefly the origin and source of any reported group differences, and discuss the educational significance of such differences.

THE WILMINGTON PUBLIC SCHOOL SYSTEM

Wilmington, North Carolina, is a Southern city with a population approximately two-thirds White and one-third Negro. At the present time there are more than 12,000 White and 5500 Negro students in the elementary, junior high and senior high schools of the city.

Negro education in Wilmington began in 1865 when several schools were established by Northern missionary societies and the Freedman's Bureau. Throughout the Reconstruction Period missionary and public schools for Negroes were established and maintained on an extensive scale. On the other hand, White public schools were closed in 1863 during the Civil War and partially reopened in 1872. For all practical purposes White schools ceased to exist or were poorly supported until 1900.

Wilmington currently maintains a biracial school system, with separate schools and teaching staffs for the White and Negro students. The White and Negro schools are substantially equivalent in terms of capital expenditures, operating expenditures per student, teacher salaries and teacher qualifications. Both races have benefited from an extensive building program. There are now sixteen elementary schools, four junior high schools and one senior high school for White students, and six elementary schools, two junior high schools and one senior high school for Negro students.

THE WILMINGTON TEST RESULTS

Tests of psychometric intelligence and educational achievement have been administered in the Wilmington public schools since the early 1920's. These psychological tests have proven invalu-

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able tools for both the administrative and the teaching personnel, and are used for determining mental ability, measuring achievement in the skill and content areas of the school curriculum, predicting future academic performance, counseling students and designing school curricula to suit best the range of abilities of the students.

The Wilmington Public School System administers a variety of psychological tests. Among these, the Otis Quick-Scoring Mental Ability Tests have proven extremely useful for classifying students into ability or homogeneous learning groups. The Otis Test is a group intelligence test, yielding a single score which can be translated into a mental age or intelligence quotient. The test comprises 80 items, including word meaning, verbal analogies, scrambled sentences, interpretation of proverbs, logical reasoning, number series, arithmetic reasoning and design analogies. Although more than two-thirds of the test items measure some form of verbal competence, there is "considerable evidence in the literature on group intelligence tests indicating that a single score reflecting a considerable emphasis on the use of verbal symbols will predict school success about as well as a more complex pattern of scores."[1] According to Lefever, the Otis Quick-Scoring Mental Ability Tests "furnish a short and easily scored indicator of scholastic aptitude," which "can be useful to both teacher and counselor by revealing within fairly broad limits of accuracy the probable level of academic achievement for a majority of pupils."[2]

In 1956 all seventh, eighth and ninth grade junior high school students in the city of Wilmington were examined on the Otis Quick-Scoring Mental Ability Test series. The group consisted of 2440 White students and 1145 Negro students. White teachers examined the White students and Negro teachers examined the Negro students. The White student group obtained a mean I.Q. of 99.55 and a standard deviation of 13.74 as compared to a mean I.Q. of 81.24 and a standard deviation of 13.45 for the Negro student group. The distribution of intelligence quotients in the two groups is presented in Table I. As shown in the Table, the range of abilities in the two groups is not the same. No Negro junior high school students obtained an I.Q. of 120 or above, while 126 or 5.2 per cent of the White junior high school students obtained I.Q.s of 120 or above. On the other hand, 70 or 6.1 per cent of the Negro students earned I.Q.s below 60, as compared to 7 or 0.3 per cent of the White students.

[1] D. W. Lefever, in *The Fifth Mental Measurements Yearbook* (edited by Oscar K. Buros), The Gryphon Press, Highland Park, New Jersey, 1959, p. 498.

[2] *Ibid.*, p. 449.

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TABLE I

Distribution of Intelligence Quotients Earned on Otis Quick-Scoring Mental Ability Tests by Seventh, Eighth and Ninth Grade Junior High School Students in Wilmington, North Carolina, in 1956.

	WHITE		NEGRO	
I.Q.	NUMBER OF STUDENTS	PER CENT OF TOTAL	NUMBER OF STUDENTS	PER CENT OF TOTAL
130 and over	27	1.1	0	—
120-129	99	4.1	0	—
110-119	410	16.8	13	1.1
100-109	690	28.3	82	7.2
90-99	681	27.9	188	16.5
80-89	314	12.8	335	29.2
70-79	174	7.1	316	27.6
60-69	38	1.6	141	12.3
50-59	7	.3	57	5.0
Below 50	0	—	13	1.1
Total	2440	100.0	1145	100.0
Mean I.Q.	99.55		81.24	
Standard Deviation	13.74		13.45	

In 1959 all tenth, eleventh and twelfth grade senior high school students in Wilmington were examined on the Otis Quick-Scoring Mental Ability Test series. This group comprised all those junior high school students tested in 1956 who had remained in the Wilmington public school system. The group consisted of 1631 White students and 730 Negro students. The White student group obtained a mean I.Q. of 101.98 and a standard deviation of 12.59, as compared to a mean I.Q. of 84.62 and a standard deviation of 11.20 for the Negro student group. The distribution of intelligence quotients in the two groups is presented in Table II. As in the previous testing, the range of abilities in the two groups is not the same. No Negro senior high school students obtained I.Q.s of 120 or above, while 117 or 7.2 per cent of the White senior high school students obtained I.Q.s of 120 or above. As a result of the "drop-out" of students from the lower end of the White and Negro distributions, there were no White or Negro senior high school students reported as earning I.Q.s below 60.

Table III presents a more detailed comparison of the test

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performance of the White and Negro student groups. The mean I.Q. of the White junior high school students is 18.31 points higher than the mean I.Q. of the Negro junior high school students. The variability of the White distribution is somewhat greater than

TABLE II

Distribution of Intelligence Quotients Earned on Otis Quick-Scoring Mental Ability Tests by Tenth, Eleventh and Twelfth Grade Senior High School Students in Wilmington, North Carolina, in 1959.

	WHITE		NEGRO	
I.Q.	NUMBER OF STUDENTS	PER CENT OF TOTAL	NUMBER OF STUDENTS	PER CENT OF TOTAL
130 and over	19	1.2	0	—
120-129	98	6.0	0	—
110-119	326	20.0	14	1.9
100-109	445	27.3	59	8.1
90-99	470	28.8	135	18.5
80-89	222	13.6	247	33.8
70-79	47	2.9	227	31.1
60-69	4	.2	48	6.6
50-59	0	—	0	—
Below 50	0	—	0	—
Total	1631	100.0	730	100.0
Mean I.Q.	101.98		84.63	
Standard Deviation	12.59		11.20	

that of the Negro distribution as is shown by the higher standard deviation. The mean I.Q. of the White senior high school students is 17.36 points higher than the mean I.Q. of the Negro senior high school students. The difference between the White and Negro means in both groups is large and statistically significant.

Between 1956 and 1959 the White student group was reduced by 33.2 per cent and the Negro student group by 36.2 per cent. The elimination of "drop-outs" from the two groups had a selective effect, since most of the "drop-outs" came from the lower end of the White and Negro distributions. Consequently the mean I.Q. of both senior high school groups is slightly higher and the variability is somewhat lower. As indicated by the reduced standard deviation the Negro scores tend to cluster more closely about the mean.

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TABLE III

Comparison of Performance on Otis Mental Ability Test by White and Negro Students in Wilmington, North Carolina.

STUDENT GROUP		Junior High School Students (1956)	Senior High School Students (1959)
WHITE	Number of Students	2440	1631
	Mean I.Q.	99.55	101.98
	Standard Deviation	13.74	12.59
NEGRO	Number of Students	1145	730
	Mean I.Q.	81.24	84.62
	Standard Deviation	13.45	11.20
	Difference Between Means	18.31	17.36
	Standard Error of the Difference Between Means	.485	.547
	t	37.75	31.74
	P	P<.001	P<.001

COMPARISON OF WILMINGTON TEST RESULTS WITH OTHER STUDIES

During the past 50 years several books and more than 250 journal articles have been published concerning the intelligence test performance of American Negroes. Major reviews of these studies have been made by Peterson,[3] Peterson and Lanier,[4] Garth,[5] Pintner,[6] Shuey,[7] and Dreger and Miller.[8] Let us now briefly compare the Wilmington test results with other studies which have been reported in the literature.

[3] J. Peterson, "The Comparative Abilities of White and Negro Children," *Comparative Psychology Monograph,* Vol. V, 1923, pp. 1-141.

[4] J. Peterson and L. H. Lanier, "Studies in the Comparative Abilities of Whites and Negroes," *Mental Measurement Monograph,* Vol. V, 1929, pp. 1-156.

[5] Thomas A. Garth, *Race Psychology: A Study of Racial Mental Differences,* McGraw-Hill, New York, 1931.

[6] R. Pinter, *Intelligence Testing: Methods and Results,* Holt, New York, 1931.

[7] Audrey M. Shuey, *The Testing of Negro Intelligence,* Bell, Lynchburg, Virginia, 1958.

[8] R. M. Dreger and K. S. Miller, "Comparative Psychological Studies of Negroes and Whites in the United States," *Psychological Bulletin,* Vol. LVII, No. 5, 1960, pp. 361-402.

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The most complete and thorough review of the results of intelligence tests administered to Negroes is Professor Audrey Shuey's *The Testing of Negro Intelligence*.[9] Shuey summarized and critically evaluated approximately 240 studies on many thousands of American Negroes, employing some 60 different intelligence tests and covering a 44-year time span (1913-1957). The most important results of these tests may be summarized as follows:

1. The I.Q. of the average American Negro is between 15 and 20 points below the I.Q. of the average American White.

2. The degree of Negro overlap of the White average I.Q. is between 10 per cent and 20 per cent (equality between the two groups would require a 50 per cent overlap).

3. Proportionately six times as many Whites as Negroes attain I.Q.s in excess of 139 (gifted children).

4. Proportionately six times as many Negroes as Whites attain I.Q.s below 70 (retarded children).

5. Negro-White differences in test score occur no matter which type of intelligence test is used—individual or group, verbal or non-verbal, cultural or culture-free—although the greatest differences occur in tests of a more abstract nature.

6. The differences between Negroes and Whites in intelligence test performance increase with age, with greater differences in test score between White and Negro primary school children than pre-school children, greater differences between White and Negro high school students than primary school children, and still greater differences between White and Negro college students than high school students.

7. Large and significant differences in intelligence test performance between Negroes and Whites are reported even when the socio-economic environment has been equated for both groups.

8. White and Negro differences persist over the entire 44-year time span despite increases in the social and economic opportunities available to Negroes relative to those of the Whites.

Included among the studies reviewed by Shuey were 32 studies of Negro high school students in which fifteen different psychometric tests were administered to approximately 9500 Negro students. According to Dr Shuey, I.Q.s were secured on 5379 of these Negro high school students. The average of the total group was 85.03, which Shuey noted was "very close to the average I.Q. of 84.68 obtained on Negro school children by

[9] Audrey M. Shuey, *op. cit.*,

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means of verbal group tests." The average I.Q. of the Southern Negro high school students was approximately 82.[10]

Since the publication of Shuey's book there have been two further studies which are of particular interest. Osborne reported the distribution of intelligence quotients among all tenth grade White and Negro students in 1958 in Savannah-Chatham County, Georgia. Using the California Test of Mental Maturity, Dr Osborne found a mean I.Q. of 103 for 539 White students, as compared to a mean I.Q. of 81 for 273 Negro students.[11]

In 1960-1961 Kennedy, Van de Riet and White attempted to provide normative data on the intellectual level and academic achievement of Negro elementary school children in the five southeastern states of Florida, Georgia, Alabama, Tennessee and South Carolina. A stratified random sample of 1800 Negro children ranging in age from five to sixteen years was selected on the basis of demographic and socio-economic factors so as to be representative of the 1,110,393 Negro elementary-school-age children residing in these five states. Using the 1960 Revision of the Stanford-Binet Intelligence Test (Form L-M), Kennedy *et al.* obtained a mean I.Q. of 80.7 and a standard deviation of 12.4 for the Negro sample as compared to a mean I.Q. of 101.8 and a standard deviation of 16.4 for the White normative sample.[12]

The Wilmington test results are strikingly similar to comparisons of White and Negro intelligence test performance which have been made in both Southern and Northern school systems throughout the United States. The mean I.Q. of the White junior and senior high school students is right at the national norm for which the Otis Mental Ability Test was standardized. The mean I.Q. of the Negro junior and senior high school students is within the range of Negro high school test performance reported by Shuey. The mean White-Negro difference in I.Q. of 18.31 and 17.36 points for the two respective Wilmington groups is again within the range of 15 to 20 points which Shuey reported to exist throughout the United States. The variability of the White junior high school and both the White and Negro senior high school students in Wilmington is somewhat less than that reported by Kennedy *et al.* in their sample of southeastern Negro elementary school children. However, this may be attributed in part to the selective effect of "drop-outs" in an older school population.

[10] *Ibid.*, p. 310.

[11] R. Travis Osborne, MANKIND MONOGRAPHS 1: RACIAL DIFFERENCE IN SCHOOL ACHIEVEMENT, The Mankind Quarterly, Edinburgh, 1962.

[12] W. A. Kennedy, V. Van de Riet and J. C. White, Jr., "A Normative Sample of Intelligence and Achievement of Negro Elementary School Children in the Southeastern United States," *Society for Research in Child Development Monographs,* Vol. XXVIII, No. 6, Purdue University, Lafayette, Indiana, 1963.

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The extent to which individual differences in intelligence test performance are genetically determined has been a subject of scientific inquiry for more than half a century. Comparison of the differences between identical and fraternal twin pairs has provided some of the best evidence on the relationship between genotype and psychological phenotype. This is based on the assumption that the greater the difference in the degree of similarity between identical and fraternal twins respectively, the greater is the influence of heredity.[13]

Newman estimated the relative influence of hereditary and environmental factors on physical and psychical traits in a group of 50 identical and 50 fraternal twins. The percentage of variance due to heredity was found to range from 65 to 80 per cent in four measures of mental ability compared with a range of 75 to 90 per cent in six measures of physical traits. For the Otis Test series, Newman reported the percentage of variance due to heredity to be 77 per cent for the Otis Test Score and 80 per cent for the Otis Test I.Q.[14]

Burt, in a review of English twin and family studies, found higher correlations in intelligence test performance for identical twins reared apart than for fraternal twins reared together and for siblings reared apart than for unrelated children reared together. With respect to the relative influence of heredity and environment, Burt concluded that of the total variance in intelligence test performance "only about 12 per cent (or slightly more) is apparently due to non-genetic influences and 88 per cent to genetic factors."[15]

Erlenmeyer-Kimling and Jarvik reviewed 52 studies conducted in eight countries on four continents over the past half century yielding over 30,000 correlational pairings for various genetic relationship categories. According to the authors, "considering only *ranges* of the observed measures, a marked trend is seen toward an increasing degree of intellectual resemblance in direct proportion to an increasing degree of genetic relationship, regardless of environmental communality." In addition, Erlenmeyer-Kimling and Jarvik noted that "for most relationship categories

[13] Henry E. Garrett, *Great Experiments in Psychology,* Appleton-Century-Crofts, New York, 1957, chapters 11, 12 and 13; R. Ruggles Gates, *Human Genetics,* Macmillan, New York, 1946; David C. Rife, *Heredity and Human Nature,* Vantage Press, New York, 1959; Leona Tyler, *The Psychology of Human Differences,* Appleton-Century-Crofts, New York, 1959.

[14] H. H. Newman, *Multiple Human Births,* Doubleday, Doran and Company, New York, 1940, p. 171.

[15] Sir Cyril Burt, "The Inheritance of Mental Ability," *The American Psychologist,* Vol. XIII, No. 1, 1958, pp. 1-15.

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the *median* of the empirical correlations closely approaches the theoretical value predicted on the basis of genetic relationship alone."[16]

All in all, the evidence from twin and family studies indicates that psychical traits are inherited to about the same extent as physical traits and that from two-thirds to three-quarters of the individual differences in intelligence test performance can be attributed to genetic factors.

RACE AND PSYCHOLOGY

The link between race—a biological or zoological concept—and psychology—the science of human behavior and intellectual functioning—has been a subject of scientific interest for a long time. In recent years a clearer understanding has been gained of the biological processes underlying human evolution and raciation on the one hand,[17] while differential psychological methods and techniques have been developed which can provide quantitative estimates of individual and group differences in mental and behavioral traits, on the other hand.[18] As a result of these advances contemporary scientists are in a much better position to determine whether or not race is a valid unit of classification for the study of psychological characteristics.

Races are formed as the result of the operation of fundamental biological processes related to the nature of heredity. These may be briefly summarized as the differential and in part adaptive selection of hereditary variations arising from mutations and genetic drift in reproductively isolated breeding populations. Thus, a race may be defined as a group of people whose members share more of the same ancestry and possess more genes in common than do members of other groups.[19]

Kurth points out that "mental and psychic behavior also is subject to inheritance, and thus cannot be excluded from a definition of race."[20] Other anthropologists have contended

[16] L. Erlenmeyer-Kimling and L. Jarvik, "Genetics and Intelligence, *Science*, Vol. CXLII, 1963, pp. 1477-1479.

[17] Carleton S. Coon, *The Origin of Races*, Alfred A. Knopf, New York, 1962, pp. 3-118; Carleton S. Coon, Stanley M. Garn and Joseph B. Birdsell, *Races: A Study of the Problems of Race Formation in Man*, Charles C. Thomas, Springfield, Illinois, 1950, pp. 10-84; Carleton S. Coon and E. E. Hunt (editors), *Anthropology: A to Z*, Grosset and Dunlap, New York, 1963, pp. 79-90; Stanley M. Garn, *Human Races*, Charles C. Thomas, Springfield, Illinois, 1961, pp. 53-69; Ilse Schwidetzky, *Das Menschenbild der Biologie*, Gustav Fischer, Stuttgart, 1959, pp. 116-171.

[18] Henry E. Garrett, *Great Experiments in Psychology, op cit;* Leona Tyler, *The Psychology of Human Differences, op. cit.*

[19] Gottfried Kurth, "Rassenbegriff," *Anthropologie: A zu Z*, Fischer Bücherei, Frankfurt, 1959, p. 164.

[20] Gottfried Kurth, "Rassengenese," *Anthropologie: A zu Z, op. cit.*, p. 180.

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that the selective forces governing human evolution and raciation—both geographico-climatic and socio-cultural—have operated to produce frequency differences in the distribution of psychological traits in human populations.[21] According to Coon, the selective forces governing the raciation of man have operated in different directions and at different rates of speed on the different continents, so that "human evolution proceeded during the latter part of the Pleistocene, at an accelerated pace, particularly among Caucasoids and Mongoloids of the Palaearctic region."[22] Kurth similarly concludes that "racially-typical behavioral traits have been accumulated through selective pressures."[23]

With the aid of workers in a variety of disciplines, considerable information and data have been obained in the field of anthropo-psychology. Racial differences have been demonstrated and described in the size, shape and structure of the brain and endocrine system,[24] in performance on tests of psychometric intelligence and educational achievement,[25] and in personality and temperament.[26] In fact, the noted British anthropologist

[21] Carleton S. Coon, *The Origin of Races, op. cit.,* pp. 72-118; Ilse Schwidetzky, *Grundzüge der Völkerbiologie,* Enke, Stuttgart, 1950, pp. 86-183.

[22] Carleton S. Coon, "Race and Ecology in Man," *Cold Spring Harbor Symposia on Quantitative Biology,* Vol. XXIV, 1959, pp. 150-160.

[23] Gottfried Kurth, "Rassengenese," *op. cit.,* p. 81.

[24] C. U. Ariëns Kappers, *The Evolution of the Nervous System in Invertebrates, Vertebrates, and Man,* De Erven F. Bohn, Haarlem, 1929, pp. 198-327; Mario F. Canella, *Principi di Psicologia Razziale,* Sansoni Edizioni Scientifiche, Florence, 1941; Mario F. Canella, *Lineamenti di Antropobiologia,* Sansoni Edizioni Scientifiche, Florence, 1943; J. C. Carothers, "The Brain and its Functioning," *The African Mind in Health and Disease,* World Health Organisation, Geneva, 1953; Cornelius J. Connolly, *External Morphology of the Primate Brain,* Charles C. Thomas, Springfield, Illinois, 1950; Carleton S. Coon, *The Origin of Races, op. cit.,* pp. 337-339; R. Ruggles Gates, *Human Genetics, op. cit*; Wilfrid D. Hambly, "Cranial Capacities: A Study in Methods," *Fieldiana: Anthropology,* Vol. XXXVI, No. 3, 1947, pp. 25-73.

[25] Henry E. Garrett, *Great Experiments in Psychology, op. cit*; Stanley D. Porteus and Marjorie Babcock, *Temperament and Race,* R. G. Badger, Boston, 1926; Stanley D. Porteus, *Primitive Intelligence and Environment,* Macmillan, New York, 1937; Audrey M. Shuey, *op. cit*; Nathaniel Weyl, *The Negro in American Civilization,* Public Affairs Press, Washington, D.C., 1960, pp. 142-196; Nathaniel Weyl and Stefan Possony, *The Geography of Intellect,* Regnery, Chicago, 1963; Gérard Wintringer, "Considérations sur l'Intelligence du Noir Africain," *Revue de Psychologie des Peuples,* Vol. X, 1955, pp. 37-55.

[26] Mario F. Canella, *op. cit*; J. C. Carothers, *op. cit.,* pp. 85-94; Carleton S. Coon, *The Origin of Races, op. cit.,* pp. 115-116; C. D. Darlington, *The Facts of Life,* Allen and Unwin, London, 1956, p. 323; S. D. Porteus and Marjorie Babcock, *op. cit*; Georges A. Heuse, "Fondements et problèmes de l'anthropologie psychologique," *Revue de Psychologie des Peuples,* Vol. VII, 1952, pp. 62-85; Georges A. Heuse, "La Psycholo-

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Sir Arthur Keith contended that "the primary marks of race are psychological." [27]

Certainly, the scientific evidence clearly indicates that the biological processes of race formation in man have produced racial differences in mental and behavioral traits as well as in physical traits [28] and that race in all of its taxonomic meanings is a valid unit of classification for the study of psychological traits.

RACE, INTELLIGENCE AND ENVIRONMENT

Although virtually all investigators report that American Negroes score lower than American Whites or White norms on tests of psychometric intelligence and educational achievement, some writers have speculated that these ethnic group differences can be attributed to environmental or socio-economic factors. Klineberg, for example, advanced the following hypothesis: [29]

> Suppose now we make the two environments more similar; equalize them as far as possible. If as the environments become more alike, the difference in test scores tends to disappear; if when the environments are to all practical purposes equalized, the difference in test scores disappears completely; we then have a strong argument in favour of the environmental rather than the hereditary explanation of the observed differences.

Several investigators have tested Klineberg's "culture hypothesis" by matching or equating the socio-economic background of groups of Whites and Negroes.

One of the most significant of these studies was that conducted by McGurk. Professor McGurk attempted to determine whether or not socio-economic differences are sufficient to account for the consistently lower average intelligence test performance of Negroes. Using a test consisting of 103 "least cultural" and 81 "most cultural" questions (as rated by 78 judges), McGurk selected subjects from 2863 seniors in 14 high schools in northern New Jersey and southeastern Pennsylvania. From this group he matched 213 White senior high school students with 213 Negro students on the basis of age, sex, course of study, school

gie des Noir Africains," *Problèmes d'Afrique centrale,* Vol. VII, 1954, pp. 169-194; Georges A. Heuse, "Personnalité du Noir et relations interethniques," *Encyclopédie mensuelle de la France d'Outre-mer,* Vol. V, 1955, pp. 453-457.

[27] Sir Arthur Keith, *A New Theory of Human Evolution,* Philosophical Library, New York, 1949, p. 377.

[28] Henry P. Fairchild, *Race and Nationality,* Ronald Press, New York, 1947, p. 169.

[29] Otto Klineberg, *Race and Psychology,* UNESCO, Paris, 1951, p. 15.

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attended and socio-economic background. The socio-economic background was matched on the basis of 11 items on the Sims Record Card, so that each Negro was matched with a White pupil whose revised Sims score was either equal to or lower than the Negro's score.

The principal findings of McGurk's study are as follows:

1. The mean score of the 213 Negroes was significantly below the mean score of the 213 Whites. Negro overlap of the White mean was only 28 per cent (equality would require a 50 per cent overlap).

2. White-Negro differences were greater on the questions judged "least cultural" than on those judged "most cultural."

3. The mean score of the 53 Negroes comprising the "high-status" group was well below the matched 53 "high-status" White group, while a group of 53 "low-status" Negroes scored slightly above a matched group of 53 "low-status" Whites.[30] In a later review McGurk concluded that "there is no evidence that as the socio-economic status of the Negro increases, racial test-score differences decrease."[31]

Garrett reviewed several studies conducted over a 50-year period which matched Whites and Negroes for various educational and socio-economic factors, including elementary, high school and college students, and noted that "Negro overlap of White norms when groups are matched . . . does not increase markedly as compared with overlap in random samples." Garrett also noted that White-Negro differences in intelligence test performance have been virtually constant over a 50-year period and that "the evidence for diminished differences between Negroes and Whites of comparable status . . . is non-existent."[32]

RACE AND EDUCATION

The 1954 Supreme Court decision striking down legally sanctioned racial separation in the public schools of the United States has created serious problems for those school systems with a high percentage of Negroes. Under the impact of court

[30] F. C. J. McGurk, *Comparison of the Performance of Negro and White High School Seniors on Cultural and Non-Cultural Psychological Test Questions,* Catholic University of America Press (microcard), Washington, D.C., 1951.

[31] F. C. J. McGurk, "On White and Negro Test Performance and Socio-Economic Factors, *Journal of Abnormal and Social Psychology,* Vol. XLVIII, 1953, p. 450; F. C. J. McGurk, "Psychological Test Score Differences and the 'Culture Hypothesis'," THE MANKIND QUARTERLY, Vol. I, No. 3, January 1961, pp. 165-175.

[32] Henry E. Garrett, "The SPSSI and Racial Differences," *American Psychologist,* Vol. XVII, No. 5, 1962.

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edicts and legislative changes, school systems have reacted in several ways: (1) mass integration; (2) ability grouping; and (3) selective integration. Let us now briefly examine the effect of each of these alternatives in the light of modern scientific findings in the field of differential and social psychology.

Mass Integration. On tests of educational achievement (reading, arithmetic and language) given in senior high schools, American Negroes score from two and one-half to four years below comparable groups of American Whites or norms based on White samples. These racial differences in test performance occur throughout the United States—in the North as well as in the South, in urban as well as in rural areas, in integrated as well as in segregated schools. For example, Osborne conducted a comprehensive longitudinal study of mental growth and school achievement in Savannah-Chatham County, Georgia, and found that "Negro children learn at a rate only one-half to three-fourths that of the White children in the same school district." [33]

If there is mass integration the school administrators would be forced either to lower the educational standards and level of instruction to the existing level in the Negro schools or attempt to maintain the higher level of the White schools. The first alternative would seriously impair the educational opportunities of the White students by failing to provide them with a school program that would challenge their abilities. The second alternative would provide unrealistic goals for the Negro students for whom it would result in a 60 to 80 per cent failure rate. Furthermore, in the upper grades White students would be placed in the same classroom with Negro students three to four years older.

Ability Grouping. Some school systems have attempted to meet the problems created by existing racial differences in ability and achievement by separating students into relatively homogeneous learning or ability groups. Thus, all students above a certain I.Q. or achievement level would be placed in one group and all those below in a different group. However, this alternative ignores the rôle of race and physically observable racial differences in the group dynamics of the classroom and assumes that all racial psychological differences can be accounted for in a single index of ability or achievement.

With respect to the latter point, Osborne has found racial differences in mental growth and achievement test content. For example, significant racial differences were found in reading and arithmetic achievement between White and Negro students

[33] R. Travis Osborne, *Racial Difference in School Achievement, op. cit.*

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matched for mental ability and chronological age, and in mental growth between another group of White and Negro students initially equated for mental ability and chronological age.[34]

Shuey notes that several investigators have reported racial differences in sub-test scores for groups of Whites and Negroes equated for over-all performance.[35] Osborne found significant racial differences in performance on arithmetic test items between 189 White and 189 Negro eighth grade students matched for age, sex and mental test performance.[36] Preliminary results from a further study by Osborne indicate that there are significant differences between Whites and Negroes in factors of intelligence and factor structure.[37] Wintringer, in his survey of African test material, notes that several investigators reported qualitative differences in their studies of African mental behavior.[38]

Since racial psychological differences are not limited to one area—such as I.Q. level—but extend to specific abilities, factors of intelligence, mental growth and educational achievement, it is quite likely that curricula designed for one group of students will not be suited to the range of abilities of a different racial group. Consequently, ability groupings with students comprised of a substantial proportion of Negroes would not result in a satisfactory educational program for either racial group.

Selective Integration. There remains the alternative of maintaining in essence the dual school system with provisions for the admission to White schools of a selected number of Negro students. While this alternative avoids the deleterious educational consequences of mass integration and ability grouping of a racially mixed school population, there is still the problem of the socio-psychological effects of such integration.

The 1954 Supreme Court school desegregation decision contended that "segregation with the sanction of Law" caused psychological damage to the Negro child. The only empirical evidence offered in support of this allegation was a series of

[34] R. Travis Osborne, "Racial Differences in Mental Growth and School Achievement: A Longitudinal Study," *Psychological Reports,* Vol. VII, 1960, pp. 233-239; R. Travis Osborne, "School Achievement of White and Negro Children of the Same Mental and Chronological Ages," THE MANKIND QUARTERLY, Vol. II, No. 1, July-September 1961, pp. 26-29; R. Travis Osborne, *Racial Difference in School Achievement, op. cit.*

[35] Audrey M. Shuey, *op. cit.*

[36] R. Travis Osborne, "Cultural Bias of Psychological Test Items," THE MANKIND QUARTERLY, Vol. IV, No. 3, January-March 1964, pp. 134-137.

[37] R. Travis Osborne, "Factorial Composition of the Wechsler Intelligence Scale for Children at the Pre-School Level," *Psychological Reports,* Vol. XIII, 1963, pp. 443-448.

[38] Gérard Wintringer, *op. cit.*

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"doll tests" by K. B. Clark.[39] Clark presented White and Negro dolls or drawings of dolls to Negro children and asked them to choose the doll that "looked like you." According to Clark, Negro preference for the White doll indicated "confusion as to self image" and thereby demonstrated damage to the personality of the Negro child as a result of school segregation. In a critical review of Clark's testimony, Van den Haag concluded: [40]

> I am forced to the conclusion that Professor Clark misled the courts. Whether it be granted that his tests show psychological damage to Negro children, the comparison between the responses of Negro children in segregated and nonsegregated schools shows that "they do not differ" except that *Negro children in segregated schools "are less pronounced in their preference for the white doll" and more often think of the colored dolls as "nice" or identify with them.* In short, if Professor Clark's tests do demonstrate damage to Negro children, then they demonstrate that the damage is *less* with segregation and *greater* with congregation. Yet Professor Clark told the court that he was proving that "segregation inflicts injuries upon the Negro" by the very tests which, if they prove anything—which is doubtful—prove the opposite!

Gregor, in an extensive review of the literature on the sociology of race relations, recently concluded that "the relevant social science data tends to indicate that integration not only does not ameliorate the psychodynamic tensions to which a minority group child of high social visibility is subject but, in fact, aggravates them." Gregor further noted that "*where social science material is available, it tends to support racial separation in the schools, at least through adolescence under conditions approximating equality of plant and instruction.*"[41]

From the above statements it appears that there are no benefits to the Negro child from selective integration but rather there is a strong probability of psychological damage due to "loss of

[39] Kenneth B. Clark, "Racial Identification and Preference in Negro Children," in *Readings in Social Psychology* (edited by Newcomb and Hartley), 1947, pp. 174-175; Kenneth B. Clark, "Effect of Prejudice and Discrimination on Personality Development," *Mid-century White House Conference on Children and Youth,* Children's Bureau, Federal Security Agency, Washington, D.C., 1950; Kenneth B. Clark, *et al.,* Appendix to Appellants' Brief in *Brown v. Board of Education.*

[40] Ernest Van den Haag, "Social Science Testimony in the Desegregation Cases: A Reply to Professor Kenneth Clark," *Villanova Law Review,* Vol. VI, No. 1, 1960, pp. 69-79.

[41] A. J. Gregor, "The Law, Social Science, and School Segregation: An Assessment," *Western Reserve Law Review,* Vol. XIV, No. 4, 1963, pp. 623 and 635.

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self-identity," "rejection of race" and "acceptance of Caucasoid aesthetic values." Furthermore, there is the as yet unexplored possibility that racially homogeneous schools are beneficial to the White child by fulfilling ingroup identity needs and aiding in the development of more stable self-concepts.

In summary, the evidence from modern psychological and social science studies indicates that racial integration can only impair the educational opportunities of both White and Negro students. For areas of the United States with a substantial proportion of Negroes the only feasible and fair solution to the educational problem is to maintain the racially separate schools, with curricula specifically designed to develop the diverse talents and abilities of each race.[42]

SUMMARY AND CONCLUSIONS

As part of a larger study on racial differences in mental growth and educational achievement throughout the United States, the results of a system-wide intelligence test battery which was administered in 1956 and 1959 to students in Wilmington, North Carolina, were briefly described and analyzed. The Wilmington test results were compared with similar studies from other areas, and discussed in terms of the origin and source of the reported group differences and their educational significance. The results may be summarized as follows:

1. *The Wilmington Public School System.* Wilmington, North Carolina, is a Southern city which currently maintains a biracial school system. At the present time there are more than 12,000 White and 5500 Negro students in the elementary, junior high and senior high schools of the city. The White and Negro schools are substantially equivalent in terms of capital expenditures, operating expenditures per student, teacher salaries and teacher qualifications.

2. *The Wilmington Test Results.* The Otis Quick-Scoring Mental Ability Tests were administered to all junior high school students in 1956 and to all senior high school students in 1959. The latter group comprised all those junior high school students tested in 1956 who had remained in the Wilmington public school system.

[42] "By trying to prove that races do not differ in these respects we do no service to mankind. We conceal the greatest problem which confronts mankind (and particularly in respect of the organization of UNESCO) namely how to use the diverse, the ineradicably diverse, gifts, talents, capacities of each race for the benefit of all races. For if we were all innately the same how should it profit us to work together? And what an empty world it would be." C. D. Darlington, in *The Race Concept: Results of an Inquiry,* UNESCO, Paris, 1952, p. 27.

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The White junior high school students tested in 1956 obtained a mean I.Q. of 99.55 and a standard deviation of 13.74 as compared to a mean I.Q. of 81.24 and a standard deviation of 13.45 for the Negro junior high school students. The White senior high school students tested in 1959 obtained a mean I.Q. of 101.98 and a standard deviation of 12.59 as compared to a mean I.Q. of 84.62 and a standard deviation of 11.20 for the Negro senior high school students. The mean White-Negro differences in I.Q. were large and statistically significant. The range of abilities in the two groups was not the same, the White student groups being slightly more variable than the Negro student groups.

3. *Comparison of Wilmington Test Results with other Studies.* The Wilmington test results are strikingly similar to comparisons of White and Negro intelligence test performance which have been made in both Southern and Northern school systems throughout the United States. The mean I.Q. of the White junior and senior high school students is right at the national norm for which the Otis Mental Ability Test was standardized. The mean I.Q. of the Negro junior and senior high school students is within the range of Negro high school test performance reported by Shuey. The mean White-Negro difference in I.Q. of 18.31 and 17.36 points for the two respective Wilmington groups is again within the range of 15 to 20 points which Shuey reported to exist throughout the United States.

4. *Genetics and Intelligence.* Twin and family studies have provided evidence of a substantial genetic component in individual differences in mental and behavioral traits. These studies further indicate that psychical traits are inherited to about the same extent as physical traits and that from two-thirds to three-quarters of the individual differences in intelligence test performance can be attributed to genetic factors. For the Otis Test series, Newman found the percentage of variance due to heredity to be 77 per cent for the Otis Test score and 80 per cent for the Otis Test I.Q.

5. *Race and Psychology.* Races are formed as the result of the operation of fundamental biological processes related to the nature of heredity and evolution. Hereditary variation, selection and isolation are the prime factors in the formation of races. The evidence of a substantial genetic component in mental and behavioral traits, together with evidence of the effect of selection upon psychical traits in human populations, leads to the conclusion that the biological processes of race formation have produced racial differences in psychological characteristics as well as in physical traits. Racial differences have been demonstrated and described in the size, shape and structure of the brain and

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endocrine system, in performance on tests of psychometric intelligence and educational achievement, and in personality and temperament. Thus race in all of its taxonomic meanings may be considered a valid unit of classification for the study of psychological traits.

6. *Race, Intelligence and Environment.* Several investigators have attempted to determine whether or not environmental differences are sufficient to account for the consistently lower average intelligence test performance of Negroes by comparing Whites and Negroes matched for socio-economic background. These studies have generally found that White-Negro differences in intelligence test performance are large and significant even when the socio-economic backgrounds of the two groups are equated. Other investigators have found that White-Negro differences in psychological test performance, measured in terms of overlap, have been virtually constant from 1918 to 1950 despite great improvement in the social and economic conditions of American Negroes.

7. *Race and Education.* Recent psychological studies have demonstrated significant racial differences in learning ability and educational achievement. Several social science studies have further indicated educational benefits from homogeneous racial grouping. In the light of these findings it is certain that racial integration can only impair the educational opportunities of both White and Negro students. Both races would be best served by maintaining racially separate schools with curricula specifically designed to develop the diverse talents and abilities of each race.

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THE ANATOMY OF THE DUCT SYSTEM OF THE BANTU PANCREAS

By I. J. M. van NIEKERK

When Opie (1901) proposed his theory that a common channel was the cause of acute haemorrhagic pancreatitis, he in fact placed the onus on the surgeons and anatomists to determine the finer points of the anatomy of the ducts, their arrangement and their relationship to the ductus choledochus.

Keeley (1958) studied the diseases of the gastro-intestinal canal and its glands in the Bantu race. He wrote as follows: "Acute pancreatitis, although frequently sought for, is extremely rare."

By means of this investigation an attempt is made to determine whether there are any anatomical grounds for the above statement. A study was made of the anatomy of the duct system of the pancreas in the Bantu. Particular attention was paid to its relationship to the ductus choledochus. By means of the available literature, comparisons were drawn between the anatomy of the Bantu pancreas and that of the European.

DUCTUS PANCREATICUS (MAJOR)

The ductus pancreaticus major is the larger and more constant duct of the pancreas. The term "Duct of Wirsung" is used by various writers, *e.g.*, Berman *et al.* (1960), Simkins (1931), Millbourn (1950), Cordier and Arsac (1952), Howard and Jones (1947) and Kozarski (1960). Kleitsch (1955), however, rejects the term particularly as regards the anatomy of the duct system: he prefers the term "main pancreatic duct." According to the *Basle Nomina Anatomica* (B.N.A.) this duct is referred to as the ductus pancreaticus (Wirsung). The *Jena Nomina Anatomica* (J.N.A.) calls it the ductus pancreaticus major, and the present *Paris Nomina Anatomica* (P.N.A.) calls it the ductus pancreaticus only.

According to Baldwin (1911), who investigated the duct system to the pancreas, the course of the ductus pancreaticus (major) is as follows:

> beginning in the tail of the pancreas it courses from left to right through the body and neck and reaches the head of the gland where it bends caudally. After receiving the accessory duct, traversing the head of the gland, it perforates the duodenal wall to empty into the duodenum in company with the common bile duct by way of the major papilla.

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The position of the ductus pancreaticus major and its course may vary greatly. Cameron (1924), as quoted by Simkins (1931), found "that the course of the ductus pancreaticus major was nearer the posterior than the anterior surface of the gland in 80% of cases. In the remaining 20% of cases it was nearer the anterior surface of the gland." In his own study, however, Simkins (1931), found that in 24 per cent of cases the course of the duct was nearer the posterior surface and that in 76 per cent of cases it was nearer the anterior surface. Simkins (1931) does, however, agree with the statement of Baldwin (1911) as regards the terminal course of the ductus pancreaticus major that: "at the head of the gland the main duct inclines somewhat abruptly caudally and dorsally with the convexity toward the right and approaches the dorsal surface of the head of the gland."

Cordier and Arsac (1952) examined 44 specimens anatomically and radiologically. In their cases the ductus pancreaticus major was always found to open on the major duodenal papilla. The ducts were also found to course nearer the posterior than the anterior surface of the gland. Kozarski (1960) examined 102 pancreatic glands by means of dissection and X-ray. In his series the ductus pancreaticus major was found to be the main efferent duct of the gland in 95.1 per cent of cases. Baldwin (1911) examined 100 specimens and found the ductus pancreaticus major to be the main efferent duct in 97 per cent of cases.

Millbourn (1950) examined 200 autopsy specimens of pancreatic glands. He found that in 90 per cent of cases the ductus pancreaticus major was the main or only drainage duct of the exocrine secretion of the pancreas. In the series done by Grant (1951) of 200 glands injected with radio-opaque substance and subsequently photographed by means of X-ray, the ductus pancreaticus major was found to be the main or only drainage duct in 91 per cent of cases.

TERMINATION OF THE DUCTUS PANCREATICUS MAJOR AND THE DUCTUS CHOLEDOCHUS

The anatomy of the ampulla of Vater and the relationships of the terminations of the ductus choledochus and the ductus pancreaticus major have been investigated by various workers. The results varied remarkably and interpretations were frequently difficult to make. Of this state of affairs Michels (1955) writes as follows:

> Opinions are strikingly at variance as to what constitutes an ampulla of Vater. Is it the same as the duodenal diverticulum, or the diverticulum papillae of Vater? Is it always present in the adult or is it merely an embryonic structure?

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Is it a mass or a space? Does the ampulla belong to the pancreatic duct or to the bile duct?

Michels (1955) continues:

> Vater's article on the orifice of the common bile duct was published in 1820. But what Abraham Vater, Professor of Anatomy at Wittenberg, originally described was a diverticulum (later known as the ampulla of Vater) which, according to Hyrtle (1880), was not an ampulla at all but an elevation of the mucosa. Actually the first accurate description and illustration of the ampulla of Vater was made by Professor Simon H. Gage, who described it thus: "The ductus choledochus and the duct of Wirsung pass through the longitudinal muscular coat of the duodenum, they are provided by it with a common, and each with a special, sphincter. The ductus choledochus and the duct of Wirsung empty into a common reservoir, the ampulla of Vater, situated between the muscular and mucous coats of the duodenum."

Hollinshead (1956) writes as follows:

> The union of the lumen of the common bile duct and pancreatic duct is referred to as forming the ampulla of Vater; as shown by Schwegler and Boyden (1937), the ampulla of Vater at first extends throughout the entire course of the two ducts through the duodenal wall, but as growth proceeds, the point of junction between the common bile duct and pancreatic duct becomes progressively nearer the tip of the major duodenal papilla. The extent to which the two ducts are separated within the duodenal wall varies, so that they may open independently upon the papilla, or there may be an ampulla of variable length.

Baldwin's (1911) description of the terminal course of the ductus pancreaticus (major) is as follows: "Reaching the level of the major duodenal papilla, the duct now runs almost horizontally to the right to join the caudal aspect of the common bile duct and empty with it into the major papilla." Cordier and Arsac (1952) define the ampulla of Vater as a dilation or widening of the ductus choledochus, within which the ductus pancreaticus major opens. The reverse happens in an extremely rare number of cases. In the absence of the ampulla the ductus choledochus and the ductus pancreaticus (major) run adjacent to each other to open separately on the papilla duodeni major. Under these circumstances, Cordier and Arsac (1952) found the opening of the ductus pancreaticus major to be antero-inferior to that of the ductus choledochus.

On examination of 50 specimens Judy and Thompson (1958) found that the opening of the ductus pancreaticus (major) on the

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papilla duodeni major was situated at a fixed distance from the pylorus. Michels (1955) writes:

> First and foremost, it is a well established fact that the anatomical arrangement whereby the bile and pancreatic ducts become converted into a communicating system via a diverticulum or an ampulla is by no means the usual anatomy, for a distinctly measurable ampulla, according to Reinhoff and Pickrell (1945), is present in less than one-third of the population.

Michels (1955) continues:

> On an embryological basis, Boyden (1937) maintains that in most adults, the ampulla is a "vestigial" structure, for a comparative embryological study of the ampulla in the opussum, guinea pig, dog and man give evidence of a progressive involution of the ampulla in the sense that in man the confluence of the bile and pancreatic ducts starts outside of the intestine, but in the course of development, the zone of junction becomes drawn into the duodenal wall (Schwegler and Boyden 1936).

Sterling (1952) made a startling contention that "in the adult the ampulla does not exist at all."

Mann and Giordano (1923) examined 200 specimens and found that the ducts opened separately in 31 per cent of cases and that in 3.5 per cent of cases an ampulla, longer than 4 mm., was present. On the other hand Cameron and Noble (1924) found the presence of an ampulla, longer than 4 mm. in length, in 66 per cent of their cases. By means of dissection of 100 specimens Singh (1958) found that in 63 per cent of cases the ductus choledochus and the ductus pancreaticus major joined to form a common hepato-pancreatic duct varying in length from 1 to 14.5 mm. In 37 per cent of cases the two ducts opened separately into the duodenum.

Michels (1955) writes as follows:

> Anatomically considered, the concept that, in the ampulla of Vater a structural arrangement exists whereby the common bile duct and pancreatic ducts are converted into a single communicating system is well established, for most of the authors who investigated the problem in dissections found an ampulla to be present in the majority of their specimens, the average of 2500 dissections being 62 per cent.

According to Hand (1936):

> . . . the fusion of the common bile duct and pancreatic duct to form a common channel was found in 80 per cent of specimens. This always occurs in the submucous portion of the bile duct. In 18 per cent the two ducts opened separately into

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the duodenum on the apex of the papilla major. In 2 per cent of the specimens no duct of Wirsung could be found. The shortest common channel was 2 mm., the longest, no less than 17 mm., while in half of the specimens the channel was 4-7 mm. long.

Martin (1962) describes the circumstances as follows:

> Die Eindmündungsstelle der Ausfuhrungsgänge haben in der Mehrzahl der Fälle eine gemeinsame Mündung, die etwa 10 cm. vom Pylorus entfernt liegt, die vereinigung erfolgt kurz vor der Mündung. Die abb. 997 (nach. Sodeman) zeight aber, das in etwa 15% die beide Gänge getrent münden und etwa 5% die Vereinigung weiter oberhalb der Eindmundüng in das Duodenum liegt. (See Diagram 1).

Howard and Jones (1947) found a common duct, *i.e.*, a hepato-pancreatic duct, in 54 per cent of their cases. These findings corresponded with those of Cameron and Noble who found an incidence of 50 per cent in their cases. Sodeman (1961) found an incidence of 65 per cent. The importance of a common channel came to the fore when Opie (1901) published his theory that the presence of a common duct plays an important part in the causation of acute pancreatitis. Howard and Jones (1947), however, put forward two conditions that had to be fulfilled prior to acceptance of Opie's (1901) common channel theory. These were:

(*a*) That a common channel must be present in a fair percentage of individuals. The opening of the two ducts also had to be a reasonable distance away from the duodenal opening so that obstruction of the common channel could occur without causing obstruction of either of the two individual ducts at the same time.

(*b*) Provided a common channel was present, what was the direction of flow of the secretions? The direction of flow of the secretions was dependent on the relative pressures within the two ducts. Howard and Jones (1947) report the findings of Dragstedt, Haymond and Ellis, who think that secretory pressures are not the only factors influencing the direction of flow. They maintain that if a patent ductus pancreaticus joins the ductus pancreaticus (major) to the duodenum, then the secretory pressure within the pancreas is little or nothing, as the duodenal opening of the ductus pancreaticus accessorius has no value.

DUCTUS PANCREATICUS ACCESSORIUS

The ductus pancreaticus accessorius is the efferent duct of the dorsal embryonic anlage of the pancreas which usually anastomoses at an early stage with the ventral anlage. Provided no anastomoses

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takes place the embryonic condition persists and the primitive dorsal duct may become the main efferent duct (duct of Santorini) of the pancreas.

The term ductus pancreaticus accessorius (Santorini) is used in both the B.N.A. and the P.N.A. The J.N.A. uses the term ductus pancreaticus minor.

According to Opie (1901) the duodenal aperture of the original dorsal duct atrophies while the area distal to the anastomoses with the ventral duct enlarges causing therefore also an enlargement of the lumen of the duct of the ventral anlage. Simkins (1931) states that J. F. Meckel contends that the calibre of the two ducts corresponds in the foetus, but as further growth takes place the ductus pancreaticus accessorius tends to atrophy at its duodenal extremity. By this means he explains the many variations found.

Simkins (1931) dissected 25 specimens and found the ductus pancreaticus accessorius to be present in all cases. He stated that cases where the duct was reported to have been absent were probably wrong. Whether the distal portion and the aperture on the minor duodenal papilla of the ductus pancreaticus minor were always patent was another question. Many technical difficulties are encountered in the determination of the patency of the lumen of the distal portion of the duct and the aperture on the papilla duodeni minor. According to Opie (1903): "on the one hand a small quantity of mucous within the lumen may readily prevent the penetration of injected material and on the other hand (according the Henle) material injected under considerable pressure may produce a false passage."

Various techniques have been tried to surmount this problem. Opie (1903) injected the duct system with Berlin-blue under pressure, Schirmer injected air, and others made microscopical studies of the papilla duodeni minor.

Simkins (1931) examined 25 cases by means of the injection-corrosion method. He found that 22 cases had closed ducts and that the remaining three had patent ducts. Howard and Jones (1947) found an open ductus pancreaticus accessorius to be present in 36 per cent of their 150 cases. Baldwin (1911), on examination of 100 cases, found that in 82 per cent of cases the duct was patent and in 10 per cent of cases it ended blindly. Dawson and Langham (1961) found a patent ductus pancreaticus accessorius in 40 per cent of their 120 cases, while Millbourn (1950) found a patent duct present in 10 per cent of his 200 cases.

Michels (1955) writes:

> Opie (1903), one of America's greatest pathologists, was among the first to state that, in 10% of 100 cases the duct of Santorini was functionally as well as structurally the chief outlet of the external pancreatic secretion. This same percentage was

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obtained by Simkins (1931) in 25 specimens and by Millbourn (1950) in 200 specimens. The percentage was reduced to 4% by Reinhoff and Pickrell (1945), for they observed only 4 cases in 100 specimens in which the accessory pancreatic duct carried the major secretion.

This state of affairs Grant (1951) found in 9 per cent of his 200 cases.

Kozarski (1960) examined 102 fresh glands. He found that the distribution of the ductus pancreaticus accessorius was dependent on the course of the ductus pancreaticus major. According to his results the exocrine drained from the antero-superior portion of the head of the pancreas via the ductus pancreaticus accessorius in 53 per cent of cases. In his series the ductus pancreaticus accessorius was the main or only efferent duct for the exocrine secretion in 4.9 per cent of cases. Dawson and Langham (1961) examined the pancreatic glands of 20 foetuses and 20 infants up to the age of 4½ years. They found that "obliteration of the accessory duct and minor papilla only rarely occurs during foetal life. After birth however, the number of cases with an obliterated accessory duct and minor papilla seems to increase gradually."

MATERIAL

(*a*) 150 Bantu cadavers were personally dissected in the Department of Anatomy of the University of Pretoria. Cadavers with pathological conditions such as carcinoma of the liver, or infiltration of the pancreatic gland by malignant conditions or tuberculosis, were not considered. 145 of the specimens were obtained from males and 5 from females. The ages ranged from 18 to 80 years.

(*b*) 25 Fresh pancreas glands were obtained from the State Mortuary in Pretoria. These were obtained from Bantus who had died 12 to 24 hours previously. This group consisted of persons who died almost instantly in accidents or from knife wounds. As far as could be ascertained the glands collected were from healthy persons only (24 males and 1 female) from 22 to 90 years of age.

(*c*) The pancreatic glands of 25 Bantu foetuses ranging from 14 to 40 weeks of age were examined.

METHODS

1. *Macrodissection*

With each dissection attention was paid to the following points.

(*a*) Topography of the pancreas and its relation to the neighbouring structures.

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(*b*) The processus uncinatus and its relation to the vena porta.

(*c*) Presence or absence of aberant pancreatic tissue, *e.g.*, annular pancreas or ectopic pancreatic tissue. For the last mentioned determination the whole abdominal cavity was examined systematically. Thereafter the pancreas was dissected and removed carefully from the pancreatic bed. It was removed with the pyloris, the whole duodenum and the proximal 3 to 4 inches of the jejunum intact. This specimen was then fixed by means of pins with the pancreas in its anatomical position. Attention was paid to the following:

(*a*) Papilla duodeni major. Its position and the number of openings present on it.

(*b*) Papilla duodeni minor. Its position and whether or not an opening was present. The distance between the papilla duodeni major and minor was measured.

(*c*) The presence of any additional papillae.

(*d*) Dissection of the ducts:

(i) The ductus pancreaticus (major) was exposed by means of fine scissors and forceps from the tail of the gland to the papilla duodeni major.

(ii) The ductus pancreaticus minor was displayed as far as its aperture (papilla duodeni minor) provided it was open. Special care was taken to determine the presence of any connection between the two above-mentioned ducts.

(iii) The ductus choledochus was dissected. Special attention was paid to its intra-pancreatic course. Great care was taken to determine the duodenal opening of the ductus choledochus. Particular note was taken of its relation to the ductus pancreaticus major, and the presence of an ampulla or common channel. Therefore it was determined whether there was any connection between the ductus pancreaticus major and the ductus choledochus, and whether they opened separately into the duodenum. An ampulla or common channel, when found, was measured. The greatest care was taken not to damage any septum that might be present and thus create a false ampulla or common channel.

(iv) The mucous membrane from the pyloris to the jejunum was examined for any additional or aberrant papillae.

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2. *The Injection-Corrosion Method of Preparation of the Duct System*

The fresh glands were used for this preparation. Immediately after removal the gland was dissected from the tail end by means of forceps and scissors to display the ductus pancreaticus major. A No. 1 cannula was then passed into the tail end of the ductus pancreaticus major and fastened by means of a fine silk thread. A 10 cc. syringe was used to inject 5 cc. of acetone through the cannula. Care was taken not to inject any air. Acetone removes all cellular debris and coagulated secretion within the ducts. The syringe was then filled with 10 per cent vinylacetate (dissolved in 20 per cent acetone). It was slowly injected through the cannula until it flowed through the papilla duodeni major. If the vinylacetate did not at the same time flow through the papilla duodeni minor a clamp was applied to the duodenal mucous membrane over the papilla duodeni major. Further pressure was then applied to the vinylacetate for 1 to 5 minutes. The pressure was released and the clamp and cannula removed if after 5 minutes no vinylacetate passed through the papilla duodeni minor. Vinylacetate was then injected into the ductus choledochus until it flowed out into the duodenum. The pancreas was then placed in its anatomical position, in a glass dish containing ice-cold water, for 2 to 3 hours. The water was then removed and concentrated hydrochloric acid (HCL Conc. B.P.) was poured over the gland until the whole gland was covered. After 24 to 36 hours the hydrochloric acid was decanted and the cast of the duct system carefully washed in running water to remove any soft tissue. The cast was then allowed to dry and photographed. The cast was preserved in 10 per cent formalin solution.

3. *Microdissection*

The foetal glands were examined under the dissecting microscope. Attention was paid to the same points as mentioned in the macrodissection of the adult glands.

OBSERVATIONS

Classification of the results was done according to the termination of the ductus pancreaticus major, accessorius, and the ductus choledochus.

According to the relationship of the ductus choledochus to the ductus pancreaticus major the glands were divisible into two groups (A).

A. Group I

In this group the ductus pancreaticus major and the ductus

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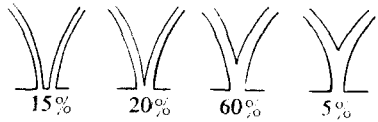
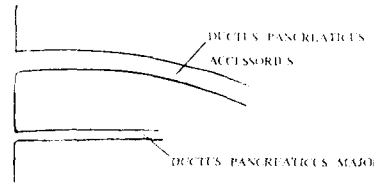
Diagram 1



The junction of the gall bladder and the pancreatic excretory duct with the duodenum (after Sodeman).

Diagram 2

Diagram illustrating the cases where the ductus pancreaticus major was very small or even obliterated, and the ductus pancreaticus accessorius formed the main or only duct of the pancreas.



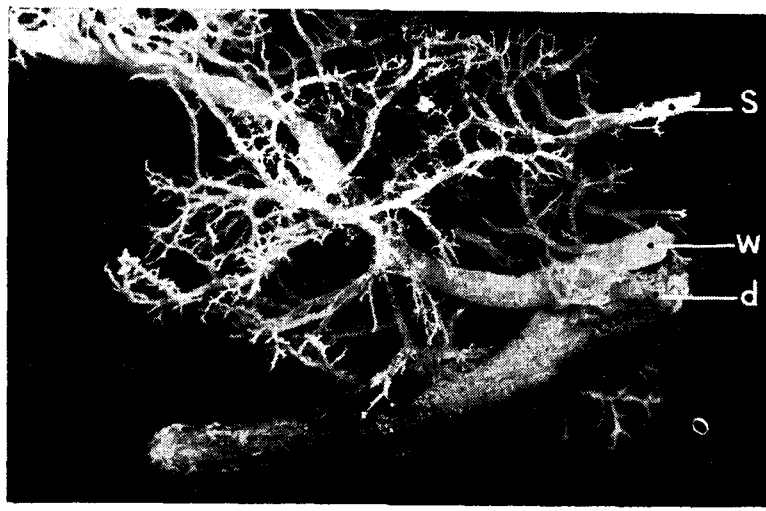


Figure 1

Cast of the terminal portions of the ductus choledochus (d) and the ductus pancreaticus major (w), illustrating their separate orifices in the duodenum. (S) is the ductus pancreaticus accessorius.

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Figure 2

Cast of the terminal portions of the ductus pancreaticus major (w) and the ductus choledochus (d), illustrating their common orifice in the duodenum.

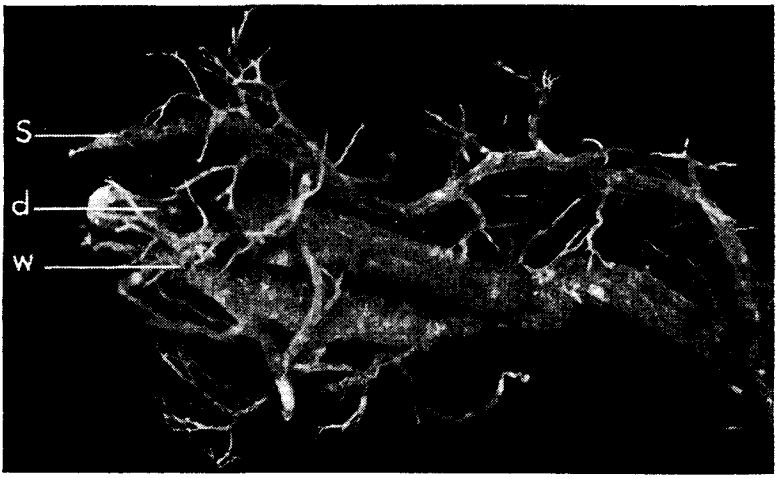

Figure 3

Cast of the terminal portions of the ductus pancreaticus accessorius (S), ductus choledochus (d) and ductus pancreaticus major (w).

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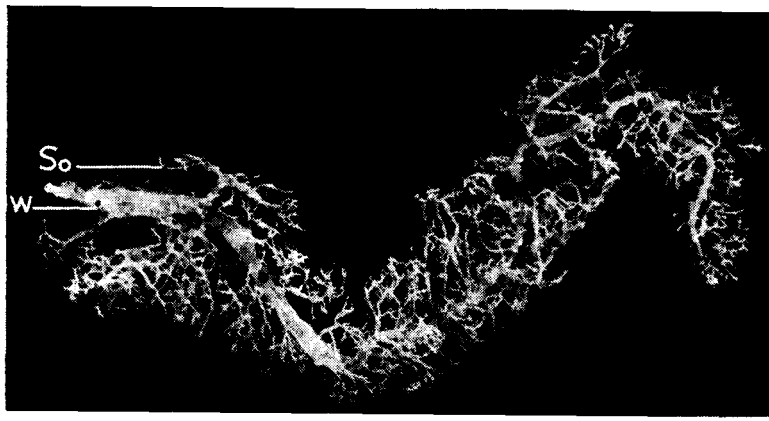

Figure 4

Cast of the duct system of the pancreas showing the ductus pancreaticus major (w) and the ductus pancreaticus accessorius (So) which was obliterated.

Figure 5

Cast of the duct system of a 90-year-old Bantu. (w) is the ductus pancreaticus major.

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choledochus opened separately into the duodenum (Figure 1). Of the 150 cases dissected 133 fell into this group, *i.e.*, 88.6 per cent. Of the foetal glands 22 fell into this group, *i.e.*, 88 per cent. The injection-maceration method demonstrated 23 which fell into this group, *i.e.*, 92 per cent.

Group II

In this group the ductus choledochus and the ductus pancreaticus major joined to form a common channel or ampulla prior to opening into the duodenum (Figure 2). Of the 150 dissected specimens only 17 fell into this category, *i.e.*, 11.4 per cent. Of the 25 foetal glands 3 fell into this group, *i.e.*, 12 per cent. By means of the injection-maceration method only 2 cases were demonstrated, *i.e.*, 8 per cent. Of the total 22 cases within this group the common duct or ampulla varied in length from 1 to 5 mm. with a mean of 2 mm. It was not always clear whether there was only a common duct or a definite dilatation, *i.e.*, an ampulla, present. A factor complicating the interpretations was a possible shrinkage of the material. In three cases a definite dilatation was present; therefore only in three cases was a classical ampulla demonstrated.

According to the relationship of the ductus pancreaticus major to the ductus pancreaticus accessorius, the glands were divided into groups III, IV and V (B).

B. Group III

This group demonstrated a patent ductus pancreaticus accessorius (Figure 3). By means of the dissection method, in 108 of the 150 cases examined the ductus pancreaticus accessorius was found to open on the papilla duodeni minor—an incidence of 72 per cent. In the 25 foetal glands examined the ductus pancreaticus accessorius was found to be patent in all cases. In the injection-maceration preparations the ductus pancreaticus accessorius was found to be patent in 19 of the 25 cases, *i.e.*, 76 per cent.

Group IV

In this group the ductus pancreaticus accessorius was partially or completely obliterated. Its connection with the duodenum was therefore lost (Figure 4).

By means of the dissection method it was found that in 42 of the 150 cases examined the ductus pancreaticus accessorius was atrophic or obliterated—an incidence of 28 per cent. In the injection-maceration preparations 6 of the 25 cases were found to have an atrophic or obliterated ductus pancreaticus accessorius, *i.e.*, 24 per cent. No obliterated ducts were found in the foetal glands.

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Group V

In these glands the lumen of the ductus pancreaticus major was very small and almost completely obliterated. The ductus pancreaticus accessorius was therefore the main or only efferent duct (see Diagram 2). Of the 150 dissected specimens, four specimens had a very small ductus pancreaticus major. In one specimen the lumen was practically closed but pancreatic secretion could still pass through it. In these cases there were no anastomoses between the ductus pancreaticus accessorius. The ductus pancreaticus accessorius was therefore the main efferent duct of the exocrine secretion of the pancreas. Five cases fall into this group. Of the total of 150 cases this is an incidence of 3.3 per cent. In all these cases the ductus pancreaticus accessorius also had a much larger lumen than the ductus pancreaticus major.

DISCUSSION

The reports in the literature as regards the presence or absence of an ampulla are strikingly varied and frequently confusing. This confusion exists also as regards the usage of the term "common hepato-pancreatic duct" versus "ampulla" or "common dilatation." The confusion is evidently due to the fact that everyone does not use the term "ampulla" in the same sense. The Roman *ampulla* was a flask with a narrow neck—*i.e.*, a duct which opens into a globular dilatation. It cannot be agreed with Sterling (1952) that an ampulla does not exist at all. In this series an ampulla was found in 13.6 per cent of cases which had a common aperture. Distinction must also be made between an ampulla which is a common pouch for bile and pancreatic juices, and an ampulla with individual pouch-like terminations of the ductus choledochus and the pancreatic duct separated completely from each other by a septum, ensuring each opens separately into the duodenum (Hollinshead 1956).

Then there is also the term "common channel." This appertains to a common channel for bile and pancreatic juices without a division. Functionally a common channel and a common ampulla would be precisely the same, as in both a mixture of bile and pancreatic juices would take place. In this series, wherever a common aperture was present, 86.4 per cent of cases had a common channel. Care must be taken in the interpretation of the data as regards the Bantu in contrast with the European. In this investigation, in only 11 per cent of cases did the ductus choledochus and the ductus pancreaticus have a common channel or ampulla.

Contrast Michels' (1955) incidence of 63 per cent and Sodeman's (1961) incidence of 65 per cent.

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The variations in the distance between the ductus pancreaticus accessorius and the papilla duodeni major can be explained according to the embryological origin of the dorsal pancreatic anlage. The proximal part of the epithelium of the foregut is multipotential and may give rise to the dorsal anlage at any level. In 28 per cent of the 150 dissected specimens the ductus pancreaticus accessorius was obliterated. In 72 per cent of cases it opened into the papilla duodeni minor. The reports in the literature are again very varied as regards the patency or obliteration of the ductus pancreaticus accessorius. Simkins (1931) for instance found 22 cases with a patent duct and 3 with a closed duct in his 25 cases. Howard and Jones found a patent duct in 36 per cent of their cases. Millbourn (1950) found a patent duct in only 10 per cent of his 200 cases.

Hand (1963) writes: "In about 60% of 50 specimens the duct of Santorini opened into the duodenum on the apex of the papilla duodeni minor."

The impression is gained that with the advancement of age there is a tendency for the duodenal end of the ductus pancreaticus accessorius to obliterate, with atrophy of the ductoles. It might be that those who found a high percentage of cases with obliterated ducts worked mainly on cadavers of advanced age. In the 25 foetal glands examined the ductus pancreaticus accessorius appeared to be patent in all cases. This corresponds with the findings of Dawson and Langham (1961) that the ductus pancreaticus accessorius seldom obliterates during foetal life. In the dissected specimens 5 cases (3.3 per cent) were found where the ductus pancreaticus accessorius was the chief or only drainage duct of the pancreatic secretions. In these cases the papilla duodeni minor was markedly enlarged. This state of affairs can be explained on an embryological basis where the embryological duct arrangement persists and no anastomoses takes place between the ducts of the ventral and dorsal anlage. The incidence of 3.3 per cent in this series more or less corresponds with that of Opie (1903), 10 per cent; Grant (1951), 9 per cent; and Simkins (1931) and Millbourn (1950), 10 per cent. Reinhoff and Pickrell (1945) found this state of affairs in 4 per cent of cases and Kozarski (1960) in 4.9 per cent of his series. Hand (1963) found it in 8 per cent of his cases.

CONCLUSIONS AND SUMMARY

In this study of the Bantu pancreas it is striking how seldom a common hepato-pancreatic duct occurs—in 11 per cent of cases as against 65 per cent of cases in the European (Sodeman 1961). Of this 11 per cent, 7.5 per cent had a "safety valve" in the form

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of a patent ductus pancreaticus accessorius should biliary reflux take place. In this series of 200 cases, therefore, acute pancreatitis caused by biliary reflux could only take place in 3.5 per cent of cases. This is of course assuming that biliary reflux does play a rôle in the causation of acute pancreatitis. In more than 90 per cent of cases the ductus pancreaticus (major) was the main efferent duct. In less than 10 per cent of cases the ductus pancreaticus accessorius was the main efferent duct. These results correspond with those quoted in the literature. The ductus pancreaticus minor was always present in the foetal material but tended to obliterate in the adult. The great number of variations in the relationship between the apertures of the ductus choledochus and the ductus pancreaticus major is evidently due to individual differences in the embryological origin of the bile duct and the ventral pancreatic duct.

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PROFESSOR CORRADO GINI

It is with the deepest regret that we report the death of Professor CORRADO GINI, Emeritus Professor of the University of Rome, Member of the *Accademia dei Lincei,* statistician, economist and sociologist, in Rome on the 13th of March 1965.

Corrado Gini was born in Motta di Livenza (Treviso) in 1884. After taking his law degree at the University of Bologna he very early dedicated himself to statistics. His first publication appeared in 1908 and he was called to his first University Chair in 1910. He was Professor of Statistics at the Universities of Cagliari (1910-1912) and Padua (1913-1925). Moving to Rome, he then taught Politics and Economic Statistics in the Faculty of Political Sciences (1925-1927), Statistics in the School (later the Faculty) of Statistics —where he also lectured in Sociology—and Statistics in the Political Sciences and Law Faculties (1927-1955).

In 1925 Professor Gini founded the Italian Central Institute of Statistics, over which he presided until 1932. In 1928 he created the School of Statistics and the Italian Committee for the Study of Population Problems of which he was President. In 1936 he founded the Faculty of Statistical, Demographic and Actuarial Sciences, of which he remained Dean until 1955.

An Honorary Member or President of several national and international institutes and societies, he organised a number of national and international congresses and led Italian delegations to many more. After the first World War he directed the League of Nations inquiries on raw materials and on the evaluation of national income and wealth. He held honorary degrees from four Universities, and was often invited to lecture abroad.

Corrado Gini directed the quarterly *La Vita Economica Italiana* from 1926 to 1943. He founded—in 1920 and 1934 respectively—*Metron,* the international statistical review, and *Genus,* the official journal of the Italian Committee for the Study of Population Problems and of the Italian Society of Genetics and Eugenics, and was the editor of these journals, as well as an Honorary Associate Editor of THE MANKIND QUARTERLY, until the time of his death. He is the author of more than a thousand publications.

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Book Reviews

BRITANNIA WAIVES THE RULES

By A. T. Culwick. Nasionale Boekhandel, Cape Town, 1965. Pp. 112. Price R1.30.

We understand that this book, written by a former British Colonial Officer in East Africa, was turned down for publication in Britain by the several publishers to whom it was offered. This is not surprising in the present climate of thought, but for all that it is regrettable that it is almost impossible to get more than one point of view published on any subject, especially one so important as a discussion of British rule and abdication in Africa.

The author is outspoken in his indictment of Britain. Many of his arguments will be hard to counter and certainly will find ready acceptance among the White populations who relied upon Britain's support in countries like Kenya, Rhodesia and elsewhere. A similar reaction will, no doubt, be found among many of the rulers and those composing the tribal councils of those tribes which have not succeeded in obtaining any political position at all in the general scramble for power in these countries, and which are likely to become depressed minorities. The development of one party states in Ghana and Zanzibar are clear enough pointers to the future. The author explains the reasons for these totalitarian trends in a chapter headed "The African Personality." He argues that such developments as are now occurring are quite consistent with African morality and thought, and that, in fact, terms which have one meaning for Europeans connote something quite different for Africans.

Like all colonial officers, the author not only had to have a degree but special training in what amounted to applied anthropology. After that he spent long years in the field as a practical applied anthropologist —for that is, when all is said and done, what such an appointment is. The views of such people therefore have relevance in the anthropological field, as they are persons quite as much entitled to be considered anthropologists as the academicals in the same subject.

After having retired from the colonial service, Mr Culwick was a representative for one of the White groups in the Kenya Conference held in London in 1960. Of this he writes:

> One thing which caused me considerable surprise [at this conference] was the pathetic ignorance the Secretary of State and his advisers displayed on the African peoples. More surprising still was the fact, admitted to me by the Under Secretary of State, that no anthropological adviser was attached to the Conference. In other words, the most weighty decisions were taken about millions of people without those deciding knowing who they were, what they did, thought, required, or anything else. It is this crass ignorance which lies at the bottom of remarks, such as "Nothing less than the Westminster pattern of democracy is good enough for Africa." When I heard this from the lips of one so eminent, a member of the British Cabinet, I did not know whether to laugh or cry. The utterance may be very patriotic, but it is rot all the same—sheer rot.
>
> Africans had by then been talking for a considerable time about the "African Personality." Had H.M.'s Minister troubled to find out what that was—what it really was—I have no doubt he would have acted differently. But no, he did not find out. Indeed, when he gave up the Colonial Office the other day—or, did it give him up?—even

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then, he had not found out. I know, because had he done so, he, as an honest man, would not have told the Conservative Party Conference that he was proud of his achievements. He would have hung his head in shame and taken tranquilliser tablets.

Certainly Ghana, Zanzibar, the Congo, and the forebodings coming about from a consideration of statements from Nyassaland, suggest that these words are scarcely too strong: for the chaotic conditions developing in several parts of Africa would seem to suggest, quite apart from anything else, that the mentality of the African has not been satisfactorily catered for in the forms of government and institutions which the colonial powers have erected on their withdrawal. Of course, the whole problem has arisen because these European governments, having been wedded to the quite unscientific doctrine that there is no difference in mental and emotional qualities between one race and another, one people and another, and so having given them a system of government which works in London, Brussels or Paris, are then surprised at its total irrelevance in the field of African affairs in native hands.

We are not surprised that this book had reached its tenth impression by March 1965 after having been first published in May 1963. It certainly provides a point of view different from the official ones being peddled around by the public relations departments of European governments and their political parties. It is popularly written but none the less deserves to be read as it is written by a man with experience in a realm of administration in which anthropology formed his day to day work.

THE POPULATION DILEMMA

Edited by Philip M. Hauser for the American Assembly, Columbia University. Prentice-Hall, New Jersey, 1963. Pp. 188. Price $1.95.

THE POPULATION CRISIS AND THE USE OF WORLD RESOURCES

Edited by Stuart Mudd for the World Academy of Art and Science. Dr W. Junk, The Hague, 1964. Pp. 564.

These two symposia on the world population problem and its relationship to resource availabilities include some 55 separate papers and cover a wide range of topics. Of the two volumes, *The Population Dilemma* is more suited to the needs of readers who wish to understand the situation in broad terms but have comparatively little need for thorough and detailed information.

The article by Ansley J. Coale, "Population and Economic Development," is of particular importance. Coale demonstrates that substantial decreases in fertility in "underdeveloped" countries will lead to large gains in total national income and per capita real income. The main reason for this is that the ratio of dependent to total population decreases, facilitating much higher rates of investment. While this analysis is entirely correct as regards the rapidly proliferating peoples with scanty resources and inadequate capital-labor ratios, it by no means follows that reductions in fertility *always* increase national income. In the first place, a total reduction of fertility would eventually place the entire population in the over-age dependent (60 and over) category. In the second place, Coale ignores the issue of increasing or decreasing returns with changes in the size of the labor force.

Dr Hauser has preserved high standards in editing this symposium. His own contribution and those of Taeuber, Fisher, Notestein, Lorimer and the late Harold F. Dorn are intelligently organized, authoritative and stimulating. The book is marred, however, by inclusion of "Population Growth in the United States" by Donald J. Bogue, which is superficial and journalistic.

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The Stuart Mudd symposium covers a very large area that cannot be critically considered in this review because of space limitations. Let me make a few observations of a critical character rather than attempt to summarize the book and its conclusions:

1. Barring world war, ecological catastrophe or some other unexpected break in continuity of socio-economic development, global population growth should be manageable until at least 1975. That is to say, the 1.4 billion increment to the world's inhabitants during 1950-1975 should be paced by modest rises in food output. Science and technology may also meet the challenge of supporting an estimated world population of 7 billion by 2000 A.D. Obviously, the prospect is that most of these people will be on a bare subsistence level; the verb "support" merely means that their decimation by uncontrollable famines is probably avoidable.

2. On the basis of the U.N.'s 1958 "high" estimates of world population (which have already been exceeded by actual growth), the "developed areas" (Europe, U.S.S.R., U.S.-Canada, Australia, New Zealand and Japan) constituted one-third (33.6 per cent) of world population in 1950 and will constitute one-fifth of the total (21.0 per cent) by the year 2000. Asia's share will rise from 51.9 per cent to 60.0 per cent of the world's people.

3. The tropical regions of the earth are growing more rapidly than the temperate zones; poor countries are multiplying more rapidly than rich ones. The Caucasoids are the slowest of the three major stocks to increase and there may be some reason to anticipate that population growth rates among the Mongoloids will be slower than among the Negroids and than in areas of heavy race mixture such as Latin America and the Middle East.

4. The world population "explosion" appears to be gradually assuming the form of a controllable reaction. Thus, the United Nations has been moving toward support of family limitation programs by member nations. Communist China has reversed its policy of intransigent opposition to demographic control. Catholic policy under Pope Paul is becoming more flexible. Remarkable reductions in the rate of population growth have occurred between 1949 and 1961 in Japan, Singapore, Puerto Rico, Finland and all of the Soviet satellite nations of Eastern Europe. A vast amount of progress has been made in medical research concerning fertility and its control and in the technological development of effective contraceptives. Oral ovulation inhibitors such as Enovid are in widespread use in the United States and are extremely effective. Unfortunately, their cost places them beyond the reach of those who should be most encouraged to use them, and the need for regular daily ingestion penalizes the fertility of competent females as compared with that of the slipshod and inept. Intrauterine rings "represent an exciting possibility for use as a relatively cheap and acceptable procedure."

5. Two psychiatric papers—by Abram Blau on marasmus and the unwanted child, and by Jerome M. Kummer on psychiatric aspects of abortion—are noteworthy contributions to two peripheral aspects of the demographic problem.

6. Professor J. Mayone Stycos of Cornell contributes a highly intelligent and original critique of the efforts to popularize contraception and birth control. He observes that from its inception this movement was directed by feminists, such as Margaret Sanger, and emphasis was placed on wresting control of reroduction from the male and bestowing it upon the female. This explains the unfortunate concentration on mothers as the main objects of contraception, the stress on medical aspects and the reliance on clinics rather than on newspapers, other media of communications and normal commercial outlets. Stycos observes that "there is overwhelming evidence that insofar as western fertility declines are due to contra-

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ceptive techniques, these techniques have been predominantly male methods." This should be doubly true in Latin America, Asia and Africa where the male dominates the family to a far greater extent than in the West. The elaborate networks of clinics are seldom used and, although Japan has 800 of them, it is estimated that only 10 per cent of Japanese families practising birth control have ever used their services. Removing the barriers to the sale of male contraceptives through normal commercial channels and stimulating discussion of birth control methods in the press would be more effective than continuing the efforts to build up birth control bureaucracies of physicians, psychiatrists and social workers.

7. The material in this symposium is of very uneven quality. Excellent reports by such outstanding demographers as Irene Taeuber and such medical authorities as Dr Gregory Pincus are juxtaposed with weird contributions on resource depletion and a most bizarre discussion of Latin American population problems by Professor Ronald Hilton of Stanford University. It is probably inevitable that a symposium on this scale should have to publish empty generalizations and moral exhortations by "stuffed shirts" and politicians emeriti. Nevertheless, it is hard to see why the editor chose to feature Bertrand Russell's misconceptions and prejudices. There is, moreover, an aroma of uncritical one-worldliness, a tenderness toward Soviet obstructionism in the population field and a righteous indignation concerning Catholic attitudes that strikes a sour note. The listing of Fellows of the World Academy of Art and Science combines some of the most distinguished names in Western science with a few inveterate apologists for Soviet policy.

8. The symposia are noteworthy in that they illustrate the almost total divorce which has occurred between the *qualitative* and the *quantitative* aspects of the population problem, between eugenics and birth control. The only article which provides factual data on the class-selective aspects of family limitation programs is the thoughtful contribution of Dr Hanna Rizk of the American University in Cairo, who cites details of a fertility survey in Egypt to show that birth control is "fairly well established" among the Egyptian top educational class in the cities, "has spread slightly among the secondary educated class," but is "almost unknown or ineffective" among the illiterate and the uneducated.

9. The major contribution to discussion of the qualitative aspects of reproduction trends is an article by the 1946 Nobel Laureate in Physiology and Medicine, Hermann J. Mueller, entitled "Better Genes for Tomorrow." This article merits fairly careful attention. Professor Mueller begins by conceding that "differences do exist between peoples, or races, in the frequency of genes affecting psychological characters . . ." and then adds that we do not and "cannot by present means judge what they are." Mueller then refers to the ease with which unspecified individuals and groups adapt to unspecified changes in their environment. This adaptability shows that " 'racial' genetic differences . . . must be comparatively unimportant." As any freshman student of logic could point out, it shows nothing of the sort. Moreover, it is rather odd that Mueller should begin by conceding that genetically determined race differences "doubtless do exist," only to put the word *racial* between quotation marks two sentences later with the intended implication that races are figments of the imagination. (I forbear from extended comment on the extreme sloppiness of Professor Mueller's terminology. Thus, when he suggests that " 'racial' genetic differences" are unknown and "comparatively unimportant," without adding the qualifying adjective *psychological,* one would assume that he did not consider such characteristics as skin color to be either racial or genetically determined). This obeisance to the dominant folk lore about the non-existence or unimportance of inherited racial difference leaves a

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bad taste, coming as it does from a scientist who habitually reasons logically about less controversial matters, and from a person who is able, because of his age, status and Nobel award, to write without fear of reprisal.

Dr Mueller proceeds to the main theme of his article—the improvement of the human genetic pool through *euselection*—the artificial insemination of females at their request with the sperm of men of outstanding intellectual qualities. This use of artificial insemination for the genetic improvement of mankind contrasts with the present American practice in which a small clique of doctors has presumed to choose the fathers for the women wishing children by this means and even to withhold from each parent the identity of the other.

Mueller observes that euselection through artificial insemination enables mankind not only to defend itself against genetic deterioration but to set into motion forces that will lead to an unlimited advance in human psychic evolution. "Herewith, the genetic situation is lifted out of the realm of dire foreboding, and dangers to be gloomily warded off, into that of inspiring opportunities, inviting our zealous efforts."

Unfortunately, the steps which Dr Mueller urges to set the euselection process in motion are characteristic of the bureaucratic socialist and of paternalism in one of its most obnoxious forms.

Dr Mueller has advocated euselection for about 40 years with a conspicuous lack of success. This is probably due to his evident desire to deprive his fellow citizens of freedom of choice in this very vital area.

Mueller urges that women should not be allowed to select the sperm donors whom they would wish as fathers of their children. The couples who wished access to sperm should be subjected to exhaustive investigations of their heredity by a horde of counsellors, including psychologists and social workers. The donors should be chosen by a scientific bureaucracy and no sperm should be used unless its donor had been dead for at least 20 years. The purpose is to give the bureaucrats time perspective and a well rounded view of the stature of all prospective donors.

This proposal might have had merit had the purpose been to breed a superman to serve as autocrat of the world. However, the aim was the more limited one of improving the genetic heritage of mankind from its present low level. If society does not prevent a woman mating with a criminal, a genetic cripple or a moron, it is hard to see why Professor Mueller's genetic bureaucracy should be entitled to deny her access to the sperm of her choosing (provided she buys it from its owner) on the grounds that this owner does not apper to the bureaucrats to belong among the immortals or because he did not have the foresight to die 20 years before the request was made.

The potentialities of euselection are too stupendous to be left in these hands. It would seem vitally important that the practical organization of artificial insemination on a voluntary basis and to improve the human genetic pool be taken over by people prepared to operate within the framework of individual choice and private initiative. This implies an appeal to the public in terms of self-interest and adventure as against Dr Mueller's conspicuously ineffectual appeal to a putative élite of high-minded, altruistic souls.

NATHANIEL WEYL.

NADA: THE RHODESIA MINISTRY OF INTERNAL AFFAIRS ANNUAL

Edited by J. H. Farquhar. L. G. Leach, Salisbury, Rhodesia, 1965. Pp. 110. Price 7s 6d.

Besides a foreword by the Hon. W. J. Harper, Minister of Internal Affairs, this annual contains a number of articles of anthropological

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interest, including the following: "Leaning Shona in the Computer Age" by Father Hannan, "The Tribes in the Victoria Reserve" by Sr. Mary Aquina, "Shumba ne Dendera" by R. Holderness, "Notes on the Australian Aborigines," "The Tribes in Chilimanzi Reserve and their Relation to the Rozvi" by Sr. Mary Aquina, "Ubukwetha amongst the AmaXhosa" by A. C. Campbell, "A Short History of Chief Chipunza" by John Thokozane, and "An Historical Tour" by Inkomoyahlaba.

"An Historical Tour" describes the visits made in 1964 by 29 senior African Chiefs to Pakistan, India, Italy, the United Kingdom—where they were received by the Queen at the Palace of Holyroodhouse, Edinburgh —and South Africa. It is interesting to read that these African Chiefs considered their visit to South Africa the highlight of the whole tour, despite the fact that they had audiences of both His Holiness the Pope and Her Majesty the Queen:

> The warmth of the welcome we received at Jan Smuts Airport was such as to make us completely forget that icy blast [they arrived in a near gale in Johannesburg]. It shook the Chiefs that these South Africans about whom they had heard such terrible things, had turned out in senior force to meet them. . . . I think the Chiefs considered the South African part of their tour its highlight. . . . We visited the new African townships in Pretoria, Johannesburg and Benoni, and we saw some of the Border homeland developments and we learnt a little about Bantustans. We sought, we looked, we asked and we listened, and we found only good. We found peace and contentment. The Chiefs were most impressed by the ethnic groupings in the new townships and by the properly constituted management councils, and they could not fault any of what they saw and learnt. . . . We were particularly interested in the system they have evolved of tribal elders being sent from their homelands to live in the towns in order to look after the social and tribal side of life within the ethnic groupings. . . . The Chiefs took particular pleasure in our visit to the Bantu University of the Northern Areas. The excellence of the layout, the buildings and the tremendous amount of equipment were eloquent of a first class university, efficiently run.

J. H. Farquhar, the editor, has contributed an article entitled "Bride Price," and Professor Michael Gelfand deals with the absence of individualism in "The Normal Man: a New Concept of Shona Philosophy." Among the subjects discussed by Phillippa Berlyn in "Traditional Religion of the MaShona" is the Africanisation of church music, as well as the "clear affinity between the religious beliefs of tribes living as far apart as the Northern Transvaal and Lake Tanganyika."

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